HVAC SUBMITTAL

Split Systems

Annapolis Towne Centre

Annapolis, Maryland

8-20-07

4133 Southerland
Houston, TX. 77092
(713) 460-7300

Annapolis Towne Centre at Parole - Unit Tabulation

Equipment					Unit	Floor												Unit
Manufacturer	Model	Manufacturer	Model	CFM	Typicals	1	2	3	4	5	6	7	8	9	10	Club	Roof	Totals
Carrier	25HBA318	Carrier	FF1ENP018005	600	A1			1	1	1								**3**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A1a						1	1	1	1	1			**5**
Carrier	25HBA318	Carrier	FF1ENP018075	600	A2			1	1	1								**3**
Carrier	25HBA318	Carrier	FF1ENP018075	600	A2a						1	1	1	1	1			**5**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A3			1	1	1	3	1	1	1				**9**
Carrier	25HBA324	Carrier	FF1ENP024005	800	A3										1			**1**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A4			3	4	4	3							**14**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A4a							4	4	4	2			**14**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A4HCP			1			1							**2**
Carrier	25HBA318	Carrier	FF1ENP018075	600	A4a Loft										2			**2**
Carrier	25HBA318	Carrier	FF1ENP018075	600	A5			4	4	4	4	4	4	4				**28**
Carrier	25HBA324	Carrier	FF1ENP024075	800	A5										2			**2**
Carrier	25HBA336	Carrier	FY4ANF036010	1200	A5 Loft										2			**2**
Carrier	25HBA318	Carrier	FF1ENP018075	600	A5a			1	1	1	1	1	1	1				**7**
Carrier	25HBA324	Carrier	FY4ANF024010	800	A5a Loft										1			**1**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A6			1										**1**
Carrier	25HBA318	Carrier	FF1ENP018005	600	A7			2	2	2	2	2	2	2	2			**16**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B1			1	1	1	1	1	1					**6**
Carrier	25HBA330	Carrier	FF1ENP030075	1000	B1a									1	1			**2**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B2			1										**1**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B2 HCP			1										**1**
Carrier	25HBA330	Carrier	FF1ENP030075	1000	B2				2	2	2	2	2	2				**12**
Carrier	25HBA330	Carrier	FF1ENP030075	1000	B2 HCP				1									**1**
Carrier	25HBA342	Carrier	FY4ANF042010	1400	B2 Loft										2			**2**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B3			1	1	1								**3**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B3a						1	1	1					**3**
Carrier	25HBA330	Carrier	FF1ENP030075	1000	B3a									1	1			**2**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B4			1	1	1	1	1	1					**6**
Carrier	25HBA330	Carrier	FF1ENP030011	1000	B4a									1				**1**
Carrier	25HBA336	Carrier	FF1ENP036011	1200	B4a										1			**1**
Carrier	25HBA330	Carrier	FF1ENP030011	1000	B5			1	1	1	1	1	1	1				**7**
Carrier	25HBA336	Carrier	FF1ENP036011	1200	B5										1			**1**
Carrier	25HBA318	Carrier	FF1ENP018075	600	B6			2	2	2								**6**
Carrier	25HBA318	Carrier	FF1ENP018075	600	B6a						1	1	1	1				**4**
Carrier	25HBA324	Carrier	FF1ENP024011	800	B6a										1			**1**
Carrier	25HBA318	Carrier	FF1ENP018075	600	B6b						1	1	1	1				**4**
Carrier	25HBA324	Carrier	FF1ENP024011	800	B6b										1			**1**
Carrier	25HBA318	Carrier	FF1ENP018075	600	B7				1	1	1	1	1	1				**6**
Carrier	25HBA342	Carrier	FY4ANF042015	1400	B7 Loft										1			**1**
Carrier	25HBA330	Carrier	FF1ENP024075	800	B8			1	1	1								**3**
Carrier	25HBA324	Carrier	FF1ENP024075	800	B8a						1	1	1					**3**
Carrier	25HBA330	Carrier	FF1ENP030075	1000	B8a									1				**1**
Carrier	25HBA336	Carrier	FF1ENP036075	1200	B8a										1			**1**
Carrier	25HBA336	Carrier	FY4ANF036010	1200	C1			1	1	1	1	1	1					**6**
Carrier	25HBA348	Carrier	FY4ANF048010	1600	C1a									1	1			**2**
Carrier	25HBA330	Carrier	FY4ANF030010	1000	C2			1	1	1	1	1	1					**6**
Carrier	25HBA330	Carrier	FY4ANF030010	1000	C2 HCP									1				**1**
Carrier	25HBA336	Carrier	FY4ANF036010	1200	C2										1			**1**
Total Typical Units per floor								**26**	**27**	**26**	**28**	**26**	**26**	**26**	**26**			**211**
Carrier	25HBA360	Carrier	FY4ANB060010	2000	L-1	1												**1**
Carrier	25HBA342	Carrier	FY4ANF042010	1600	L-2		1											**1**
Carrier	25HBA330	Carrier	FY4ANF030010	1000	MS		1											**1**
Carrier	25HBA318	Carrier	FY4ANF018005	600	H1		1											**1**
Carrier	25HBA318	Carrier	FY4ANF018005	600	H2		1											**1**
Carrier	38BNE024	Carrier	40BNE024	1000	EE	2	1											**3**
		Carrier	50HJQ007	1800	RTU-1												1	**1**
		Carrier	50JZ024	700	RTU-2												1	**1**
		Carrier	50JZ024	700	RTU-3												1	**1**
		Carrier	50HJQ008	3000	RTU-4												1	**1**
		Carrier	50HJQ008	3000	RTU-5												1	**1**
		AAON	-	2100	RTU-0A1											1		**1**
		AAON	-	1900	RTU-0A2											1		**1**
		Friedrich	PDE15K	350	PTAC-1												1	**1**
		Friedrich	PDE07K	250	PTAC-4	1												**1**
		Friedrich	PDE07K	250	PTAC-5	1												**1**
Total Common area units per floor						**5**	**5**									**2**	**6**	**18**

8/21/2007

25HBA3
Base™ Series 13 Heat Pump
with Puron® Refrigerant

Carrier®
Turn to the Experts℠

Product Data

Puron™
the environmentally sound refrigerant

A04030

Carrier's heat pumps with Puron® refrigerant provide a collection of features unmatched by any other family of equipment. The 25HBA has been designed utilizing Carrier's Puron refrigerant. The environmentally sound refrigerant allows consumers to make a responsible decision in the protection of the earth's ozone layer.

As an Energy Star® Partner, Carrier Corporation has determined that this product meets the Energy Star® guidelines for energy efficiency. Refer to the combination ratings in the Product Data for system combinations that meet Energy Star® guidelines.

INDUSTRY LEADING FEATURES / BENEFITS

Efficiency

- 13 SEER/ 10.1 - 10.8 EER/ 7.7 - 8.3 HSPF (nominal)
- Microtube Technology™ refrigeration system
- Indoor air quality accessories available

Sound

- Sound level as low as 74 dBA

Comfort

- System supports Thermidistat™ or standard thermostat controls

Reliability

- Puron® refrigerant - environmentally sound, won't deplete the ozone layer and low lifetime service cost.
- Front-seating service valves
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- High pressure switch
- Loss of charge switch
- Filter drier
- Balanced refrigeration system for maximum reliability

Durability

WeatherArmor™ protection package:

- Solid, Durable sheet metal construction
- Dense wire coil guard
- Baked-on, complete coverage, powder paint

Applications

- Long-line - up to 250 ft. total equivalent length, up to 200 ft. condenser above evaporator, or up to 80 ft. evaporator above condenser (See Longline Guide for more information.)
- Low ambient (down to -20°F) with accessory kit

Warranty

- 5 year limited compressor warranty
- 5 year limited parts warranty

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13
N	N	A	A	A/N	N	N	N	A/N	A/N	A/N	N	N
2	**5**	**H**	**B**	**A**	**3**	**3**	**6**	**A**	**0**	**0**	**3**	0
Product Series		Product Family	Tier	Major Series	SEER	Cooling Capacity		Variations	Open	Open	Voltage	Minor Series
25 = HP		H = RES HP	B=Base	A = Puron	3=13 SEER			A = Standard	0=Not Defined	0=Not Defined	3=208/230–1	0, 1, 2...

Puron™
the environmentally sound refrigerant

ARI PERFORMANCE CERTIFIED™
ARI Standard 210/240
Unitary Air Conditioners

ISO 9001:2000
QMI REGISTERED

ENERGY STAR PARTNER

As an Energy Star® Partner, Carrier Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Refer to the combination ratings in Product Data for system combinations that meet Energy Star guidelines.

25HBA3

STANDARD FEATURES

Feature	18	24	30	36	42	48	60
Puron Refrigerant	X	X	X	X	X	X	X
13 SEER	X	X	X	X	X	X	X
Scroll Compressor	X	X	X	X	X	X	X
Dense Wire Coil Guard	X	X	X	X	X	X	X
Field Installed Filter Drier	X	X	X	X	X	X	X
Front Seating Service Valves	X	X	X	X	X	X	X
Internal Pressure Relief Valve	X	X	X	X	X	X	X
Internal Thermal Overload	X	X	X	X	X	X	X
Long Line capability	X	X	X	X	X	X	X
Low Ambient capability with Kit	X	X	X	X	X	X	X
Suction Line Accumulator	X	X	X	X	X	X	X
High Pressure Switch	X	X	X	X	X	X	X
Loss of Charge Switch	X	X	X	X	X	X	X

PHYSICAL DATA

UNIT SIZE SERIES	18–30	24–30	30–30	36–30	42–30	48–30	60–30
Operating Weight (lb)	146	162	203	207	246	263	279
Shipping Weight (lb)	169	189	235	239	278	293	311
Compressor Type	Scroll						
REFRIGERANT	Puron® (R–410A)						
Control	TXV (Puron Hard Shutoff)						
Charge (lb)	5.25	5.9	7.6	7.65	8.4	11.75	12.35
COND FAN	Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty. (CFM)	2196	2614	2614	3365	3810	4046	4046
Motor HP	1/10	1/10	1/10	1/4	1/5	1/5	1/5
Motor RPM	1100	1100	1100	1100	800	800	800
COND COIL							
Face Area (Sq. ft.)	13.13	15.09	25.87	25.87	25.15	20.12	22.63
Fins per In.	25	20	20	20	20	20	20
Rows	1	1	1	1	1	2	2
Circuits	4	5	6	6	6	8	8
VALVE CONNECT. (In. ID)							
Vapor	5/8	5/8	3/4	3/4	7/8	7/8	7/8
Liquid	3/8						
REFRIGERANT TUBES* (In. OD)							
Vapor (0–80 ft. Tube Length)	5/8	5/8	3/4	3/4	7/8	7/8	1–1/8
Liquid (0–80 ft. Tube Length)	3/8						

* For tubing sets between 80 and 200 ft. horizontal or 20 ft. vertical differential, consult the Longline Guideline.

Note: See unit Installation Instruction for proper installation.

VAPOR LINE SIZING AND COOLING CAPACITY LOSS PURON 1-STAGE HEAT PUMP APPLICATIONS

LONG LINE APPLICATION: An application is considered "Long line" when the total equivalent tubing length exceeds 80 ft. or when there is more than 20 ft. vertical separation between indoor and outdoor units. These applications require additional accessories and system modifications for reliable system operation. The maximum allowable total equivalent length is 250 ft. The maximum vertical separation is 200 ft. when outdoor unit is above indoor unit, and 80 ft. when the outdoor unit is below the indoor unit. Refer to Accessory Usage Guideline below for required accessories. See Longline Application Guideline for required piping and system modifications. Also, refer to the table below for the acceptable vapor tube diameters based on the total length to minimize the cooling capacity loss.

Unit Nominal Size (Btuh)	Acceptable Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%)Total Equivalent Line Length (ft.)										
		Standard Application			Long Line Application Requires Accessories							
		25	50	80	80+	100	125	150	175	200	225	250
18000 1–Stage Puron HP	1/2	1	2	3	3	4	6	7	8	9	10	12
	5/8	0	0	1	1	1	1	2	2	3	3	3
24000 1–Stage Puron HP	5/8	0	1	1	1	2	3	3	4	4	5	6
	3/4	0	0	0	0	0	1	1	1	1	1	2
30000 1–Stage Puron HP	5/8	1	2	3	3	3	4	5	6	7	8	9
	3/4	0	0	1	1	1	1	2	2	2	3	3
	7/8	0	0	0	0	0	1	1	1	1	1	1
36000 1–Stage Puron HP	5/8	1	2	4	4	5	6	7	9	10	11	13
	3/4	0	0	1	1	1	2	2	3	3	4	4
	7/8	0	0	0	0	0	1	1	1	1	2	2
42000 1–Stage Puron HP	3/4	0	1	2	2	2	3	4	4	5	6	6
	7/8	0	0	1	1	1	1	2	2	2	3	3
48000 1–Stage Puron HP	3/4	0	1	2	2	3	4	5	5	6	7	8
	7/8	0	0	1	1	1	2	2	2	3	3	4
60000 1–Stage Puron HP	3/4	1	2	4	4	5	6	7	9	10	11	12
	7/8	0	1	2	2	2	3	4	4	5	5	6
	1 1/8	0	0	0	0	1	1	1	1	1	1	2

Standard Length = 80 ft. or less total equivalent length

Applications in this area are long line. Accessories are required as shown recommended on Long Line Application Guidelines

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit See Long Line Application Guidelines

ACCESSORIES

ORDER NUMBER	DESCRIPTION	18–30	24–30	30–30	36–30	42–30	48–30	60–30
HC34GE239	BALL BEARING MOTOR	X						
HC34GE240	BALL BEARING MOTOR		X	X				
HC38GE228	BALL BEARING MOTOR					X		
HC40GE226	BALL BEARING MOTOR				X			
HC40GE228	BALL BEARING MOTOR						X	X
KAACH1201AAA	CRANKCASE HTR					X	S	S
KAACH1401AAA	CRANKCASE HTR	X	X	X	X			
KSACY0101AAA	CYCLE PROTECTOR	X	X	X	X	X	X	X
KAAFT0101AAA	FREEZE THERMOSTAT	X	X	X	X	X	X	X
KSAHS1701AAA	HARD START	X	X	X	X	X	X	X
KHAIR0101AAA	ISOLATION RELAY	X	X	X	X	X	X	X
KSALA0301410	LOW AMBIENT PSW	X	X	X	X	X	X	X
KSALA0601AAA	MOTORMASTER 230V	X	X	X	X	X	X	X
KHAOT0201SEC	OUTDOOR THERMOSTAT	X	X	X	X	X	X	X
KHAOT0301FST	OUTDOOR THERMOSTAT	X	X	X	X	X	X	X
KHALS0401LLS	SOLENOID VALVE	X	X	X	X	X	X	X
KSASH0601COP	SOUND BLKT	X	X	X	X	X	X	
KSASH2101COP	SOUND BLKT							X
KAACS0201PTC	START ASSIST PTC	X	X	X	X	X	X	X
KSASF0101AAA	SUPPORT FEET	X	X	X	X	X	X	X
KAATD0101TDR	TIME DELAY RELAY	X	X	X	X	X	X	X
KSATX0201PUR	TXV PURON HSO	X	X	X				
KSATX0301PUR	TXV PURON HSO				X	X		
KSATX0401PUR	TXV PURON HSO						X	
KSATX0501PUR	TXV PURON HSO							X

x = Accessory S = Standard

ACCESSORY THERMOSTATS

THERMOSTAT / SUBBASE PKG.	DESCRIPTION
TSTATCCPRH01–B*	Thermidistat™ Control — Non–Programmable/Programmable Thermostat with Humidity Control (For use in Dual Fuel, AC, HP, and 2S applications. Includes Outdoor Air Temperature Sensor.)
TSTATCCPHH01–B*	Hybrid Heat™ (Dual Fuel) Thermostat — Auto Changeover, 7–Day Programmable, °F/°C, Includes Outdoor Sensor (TSTATXXSEN01–B)
TSTATCCPHP01–B	Thermostat — Auto Changeover, 7–Day Programmable, °F/°C, 2–Stage Heat, 1–Stage Cool
TSTATCCNHP01–C	Thermostat — Auto Changeover, Non–Programmable, °F/°C, 2–Stage Heat, 1–Stage Cool
TSTATCCSHP01	Standard Programmable Thermostat—Manual Changeover, 5–2 Day Programmable, °F/°C, 1–Stage Heat/ 1–Stage Cool
TSTATCCBHP01–B*	Builder's Thermostat — Heat Pump, Non–Programmable, °F/°C, 2–Stage Heat, 1–Stage Cool, Manual Changeover
TSTATXXSEN01–B**	Outdoor Air Temperature Sensor
TSTATXXNBP01	Backplate for Non–Programmable Thermostat
TSTATXXPBP01	Backplate for Programmable Thermostat and Thermidistat™ Control
TSTATXXSBP01	Backplate for Standard Programmable Thermostat
TSTATXXBBP01	Backplate for Builder's Thermostat
TSTATXXCNV10†	Thermostat Conversion Kit (4 to 5 Wire) — 10 Pack

* Do not use in zoning heat pump applications.

** Outdoor temperature sensor is an accessory for all Carrier electronic thermostats, except the non–programmable air conditioner version and builder;s thermostats. It allows the temperature at a remote location (outdoors) to be displayed on the thermostat. The outdoor air temperature sensor must be used with the dual fuel thermostat.

† Thermostat conversion kit is a 24–vac accessory that can turn a 4–wire thermostat application into a 5–wire application. This kit can also be used to replace a broken thermostat wire, or add an extra wire when needed.

The outdoor air temperature sensor is included with the Thermidistat Control and dual fuel thermostat.

ACCESSORY USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW–AMBIENT COOLING APPLICATIONS (Below 55° F)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 Ft.)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles)
Crankcase Heater	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No
Accumulator	Standard	Standard	Standard
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
Motor Master® Control or Low–ambient Pressure Switch	Yes	No	No
Support Feet	Recommended	No	Recommended
Liquid Line Solenoid Valve	No	See Long–Line Application Guideline	No
Ball Bearing Fan Motor	Yes†	No	No

* For tubing line sets between 80 and 200 ft. and/or 20 ft. vertical differential, refer to Residential Split–System Longline Application Guideline.
† Required for Low–Ambient Controller (full modulation feature) and MotorMaster® Control only.

Accessory Description and Usage (Listed Alphabetically)

1. Ball-Bearing Fan Motor

A fan motor with ball bearings which permits speed reduction while maintaining bearing lubrication.

Usage Guideline:

Required on all units when using MotorMaster®

2. Compressor Start Assist - Capacitor and Relay

Start capacitor and relay gives a ”hard” boost to compressor motor at each start up.

Usage Guideline:

Required for reciprocating compressors in the following applications:

Long line

Low ambient cooling

Hard shut off expansion valve on indoor coil

Liquid line solenoid on indoor coil

Required for single-phase scroll compressors in the following applications:

Long line

Low ambient cooling

Suggested for all compressors in areas with a history of low voltage problems.

3. Compressor Start Assist — PTC Type

Solid state electrical device which gives a ”soft” boost to the compressor at each start-up.

Usage Guideline:

Suggested in installations with marginal power supply.

4. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage Guideline:

Required in low ambient cooling applications.

Required in long line applications.

Suggested in all commercial applications.

5. Evaporator Freeze Thermostat

An SPST temperature-actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

Usage Guideline:

Required when low ambient kit has been added.

6. Isolation Relay

An SPDT relay which switches the low-ambient controller out of the outdoor fan motor circuit when the heat pump switches to heating mode.

Usage Guideline:

Required in all heat pumps where low ambient kit has been added.

7. Liquid-Line Solenoid Valve (LLS)

An electrically operated shutoff valve which stops and starts refrigerant liquid flow in response to compressor operation. It is to be installed at the outdoor unit to control refrigerant off cycle migration in the heating mode.

Usage Guideline:

An LLS is required in all long line heat pump applications to control refrigerant off cycle migration in the heating mode. See Long Line Guideline.

8. Low-Ambient Pressure Switch Kit

A long life pressure switch which is mounted to outdoor unit service valve. It is designed to cycle the outdoor fan motor in order to maintain head pressure within normal operating limits. The control will maintain working head pressure at low-ambient temperatures down to 0°F when properly installed.

Usage Guideline:

A Low-Ambient Pressure Switch or MotorMaster® Low-Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

9. MotorMaster® Low-Ambient Controller

A fan-speed control device activated by a temperature sensor, designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to -20°F (-28.9°C), it maintains condensing temperature at 100°F ±10°F (37.8°C ± -12°C).

Usage Guideline:

A MotorMaster® Low Ambient Controller or Low-Ambient Pressure Switch must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

Suggested for all commercial applications.

Accessory Description and Usage (Listed Alphabetically) - CONTINUED

10. Outdoor Air Temperature Sensor

Designed for use with Carrier Thermostats listed in this publication. This device enables the thermostat to display the outdoor temperature. This device also is required to enable special thermostat features such as auxiliary heat lock out.

Usage Guideline:

Suggested for all Carrier thermostats listed in this publication.

11. Outdoor Thermostat

An SPDT temperature-actuated switch which turns on supplemental electric heaters when outdoor air temperature drops below a user-selected set point.

Usage Guideline:

Electric supplemental heat applications in non-variable speed indoor units when electric heat staging is desired.

12. Secondary Outdoor Thermostat

An SPDT temperature-actuated switch which turns on third-stage of supplemental electric heaters when outdoor air temperature drops below the second-stage set point.

Usage Guideline:

Outdoor thermostat applications where electric heater is capable of 3-stage operation.

13. Sound Hood

Wraparound sound reducing cover for the compressor. Reduces the sound level by about 2 dBA.

Usage Guideline:

Suggested when unit is installed closer than 15 ft. to quiet areas, bedrooms, etc.

Suggested when unit is installed between two houses less than 10 ft. apart.

14. Thermostatic Expansion Valve (TXV) Bi-Flow

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Usage Guideline:

Accessory required to meet ARI rating and system reliability, where indoor not equipped.

Required in all heat pump applications designed with Puron refrigerant.

15. Time-Delay Relay

An SPST delay relay which briefly continues operation of indoor blower motor to provide additional cooling after the compressor cycles off.

Note: Most indoor unit controls include this feature. For those that do not, use the guideline below.

Usage Guideline:

Accessory required to meet ARI rating, where indoor not equipped.

ELECTRICAL DATA

UNIT SIZE	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MIN WIRE SIZE†	MIN WIRE SIZE†	MAX LENGTH (ft.)‡	MAX LENGTH (ft.)‡	MAX FUSE** or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		60° C	75° C	60° C	75° C	
18–30	208–230/1	253	197	48	9.0	0.75	12	14	14	66	62	20
24–30				58.3	12.8	0.75	16.8	14	14	47	45	25
30–30				77	14.1	0.75	21.4	12	12	58	56	30
36–30				79	16.7	1.4	22.2	12	12	56	54	35
42–30				109	19.9	1.2	26	10	10	77	73	40
48–30				117	21.8	1.2	35.4	8	8	88	84	50
60–30				134	26.3	1.2	34.1	8	8	91	87	50

* Permissible limits of the voltage range at which the unit will operate satisfactorily

† If wire is applied at ambient greater than 30° C (86° F), consult table 310–16 of the NEC (ANSI/NFPA 70). The ampacity of non–metallic–sheathed cable (NM), trade name ROMEX, shall be that of 60° C (140° F) conditions, per the NEC (ANSI/NFPA 70) Article 336–26. If other than uncoated (no–plated), 60 or 75° C (140 or 167° C) insulation, copper wire (solid wire for 10 AWG or smaller, stranded wire for larger than 10 AWG) is used, consult applicable tables of the NEC (ANSI/NFPA 70).

‡ Length shown is as measured 1 way along wire path between unit and service panel for voltage drop not to exceed 2%.

** Time–Delay fuse.

FLA – Full Load Amps

LRA – Locked Rotor Amps

MCA – Minimum Circuit Amps

RLA – Rated Load Amps

NOTE: Control circuit is 24–V on all units and requires external power source. Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

25HBA3

A-WEIGHTED SOUND LEVEL (DBA)

UNIT SIZE	STANDARD RATING	TYPICAL OCTAVE BAND SPECTRUM (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–30	75	54	63	68.5	71.5	68	63.5	57
24–30	75	54.5	64	69	69.5	67.5	64	58
30–30	74	52	62.5	66.5	68.5	65	63.5	59
36–30	76	60	64	69.5	70	68.5	65.5	60.5
42–30	77	55.5	60	63.5	71.5	65	62.5	59
48–30	78	57	64	68	74	67	63	58.5
60–30	76	58.5	63	68	70.5	66.5	64.5	59.5

A-WEIGHTED SOUND LEVEL (DBA) WITH SOUND SHIELD

UNIT SIZE	STANDARD RATING	TYPICAL OCTAVE BAND SPECTRUM (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–30	74	53.5	63.0	68.0	70.0	67.5	63.0	56.5
24–30	74	54.0	63.5	69.0	69.0	67.5	63.5	57.5
30–30	74	51.5	62.0	66.5	67.5	64.5	62.0	57.5
36–30	76	58.5	63.5	69.5	70.5	69.0	65.5	60.5
42–30	75	55.0	60.5	63.5	69.0	64.5	61.5	56.0
48–30	75	57.5	63.0	67.5	71.5	65.5	60.5	54.5
60–30	75	58.5	62.5	67.5	69.0	64.5	61.5	56.0

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

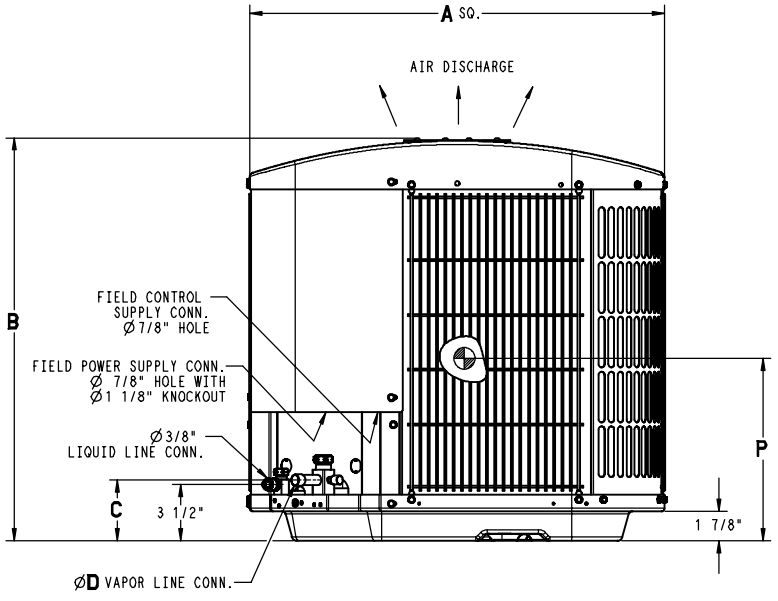
UNIT SIZE–SERIES	REQUIRED SUBCOOLING (°F)
18–30	10
24–30	12
30–30	11
36–30	10
42–30	11
48–30	11
60–30	12

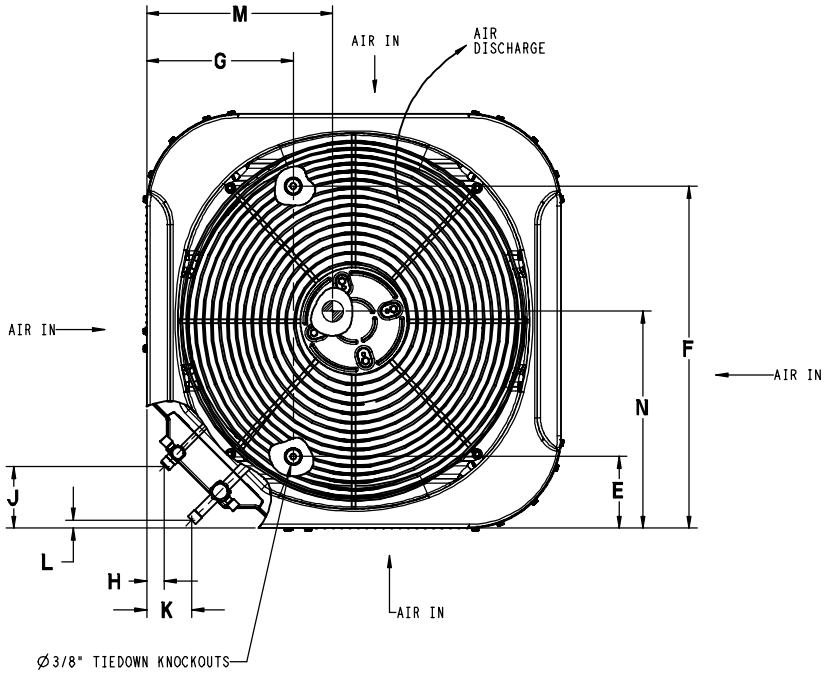
DIMENSIONS

UNIT	SERIES	ELECTRICAL CHARACTERISTICS				A	B	C	D	E	F	G	H	J	K	L	M	N	P
		208–230–1–60	230–1–60	208/230–3–60	460–3–60														
25HBA318	0	X	0	0	0	25 3/4”	31 13/16”	3 3/4”	5/8”	4 7/16”	21 1/4”	9 1/8”	1 1/8”	3 13/16”	2 13/16”	1/2”	10 1/4”	10 3/4”	14”
25HBA324	0	X	0	0	0	31 3/16”	28 15/16”	3 3/4”	5/8”	6 9/16”	24 11/16”	9 1/8”	1 1/8”	3 13/16”	2 13/16”	1/2”	15 5/8”	16 3/4”	14 1/2”
25HBA330	0	X	0	0	0	31 3/16”	45 15/16”	3 3/4”	3/4”	6 9/16”	24 11/16”	9 1/8”	1 1/8”	3 13/16”	2 13/16”	1/2”	20 1/4”	17 3/8”	18 3/4”
25HBA336	0	X	0	0	0	31 3/16”	45 15/16”	3 3/4”	3/4”	6 9/16”	24 11/16”	9 1/8”	1 1/8”	3 13/16”	2 13/16”	1/2”	17”	14 3/4”	20 3/8”
25HBA342	0	X	0	0	0	35”	39 1/8”	3 7/8”	7/8”	6 9/16”	28 7/16”	9 1/8”	1 1/8”	3 13/16”	2 15/16”	5/8”	17 1/4”	19 1/8”	15 3/4”
25HBA348	0	X	0	0	0	35”	32 5/16”	3 7/8”	7/8”	6 9/16”	28 7/16”	9 1/8”	1 1/8”	3 13/16”	2 15/16”	5/8”	19”	19”	14 1/2”
25HBA360	0	X	0	0	0	35”	35 3/4”	3 7/8”	7/8”	6 9/16”	28 7/16”	9 1/8”	1 1/8”	3 13/16”	2 15/16”	5/8”	19”	19”	19”

X = YES
0 = NO

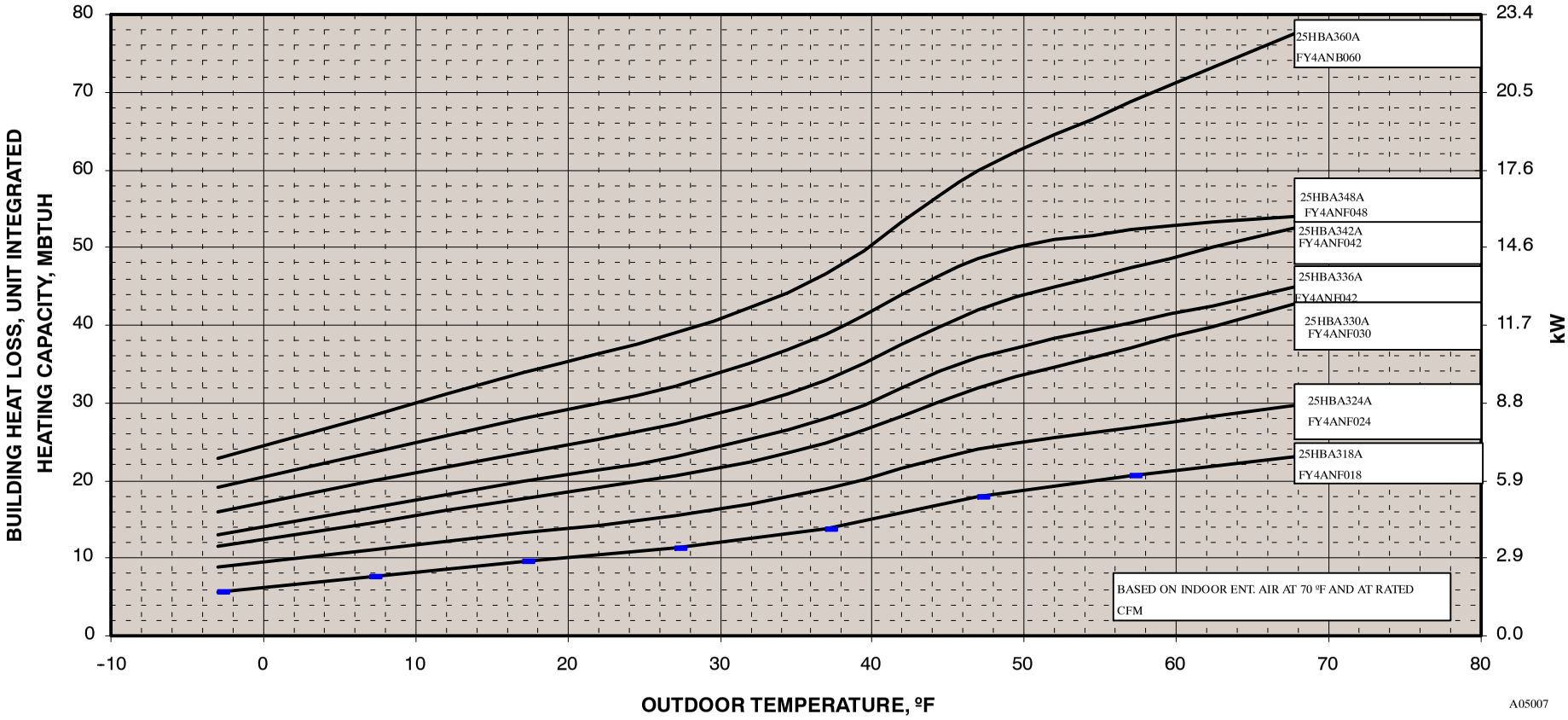
1. Allow 30” clearance to service side of unit, 48” above unit, 6” on one side, 12” on remaining side, and 24” between units for proper airflow.
2. Minimum outdoor operating ambient in cooling mode is 55 °F, max. 125° F .
3. Series designation is the 13th position of the unit model number.
4. Center of gravity ⊕.





UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS
18	26” X 26”
24, 30, 36	31 1/2” X 31 1/2”
42, 48, 60	35” X 35”

25HBA3 BALANCE POINT WORKSHEET



COMBINATION RATINGS

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									
			Cooling				Heating					
			Factory Enhance	Standard Rating	SEER TDR	EER	High Temp E Capacity	High Temp E COP	Low Temp H Capacity	Low Temp H COP	HSPF	Furnace Model
	*FY4ANF018	17,100	TDR&TXV	13.00		10.50	18,000	3.36	10,900	2.24	7.7	
	FF1ENP018	17,100	TDR&TXV	13.00		10.50	18,000	3.38	10,900	2.26	7.7	
	FF1ENP024	17,400	TDR&TXV	13.20		10.70	17,900	3.44	10,900	2.28	7.7	
	FV4BNF002	17,700	TDR&TXV	14.00		12.00	17,200	3.64	10,500	2.48	8.2	
	FX4CNF018	17,500	TDR&TXV	14.00		11.70	17,600	3.60	10,500	2.38	8.0	
	FX4CNF024	17,700	TDR&TXV	14.00		12.00	17,400	3.66	10,500	2.42	8.1	
	FY4ANF024	17,200	TDR&TXV	13.00		10.50	17,900	3.38	11,000	2.26	7.7	
	CAP**1814A**	17,000	TDR&TXV	14.00		11.70	17,100	3.34	10,200	2.30	7.7	58CV(A,X)070–12
	CAP**1814A**	17,000	TXV		13.00	10.50	18,000	3.32	10,900	2.24	7.7	
	CAP**2414A**	17,300	TDR&TXV	14.00		11.70	17,300	3.50	10,300	2.36	7.8	58CV(A,X)070–12
	CAP**2414A**	17,400	TXV		13.00	10.80	18,000	3.48	11,000	2.30	7.7	
	CAP**2417A**	17,400	TDR&TXV	14.00		12.00	17,200	3.54	10,300	2.38	7.8	58CV(A,X)090–16
	CAP**2417A**	17,300	TDR&TXV	14.00		11.70	17,300	3.52	10,300	2.36	7.9	58MVB060–14
	CAP**2417A**	17,400	TXV		13.00	10.80	18,000	3.48	11,000	2.30	7.7	
	CNPF*2418A**	17,400	TXV		13.00	10.80	18,000	3.54	11,000	2.30	7.8	
18–30	CNPH*2417A**	17,300	TDR&TXV	14.00		11.70	17,300	3.54	10,300	2.38	7.8	58CV(A,X)070–12
	CNPH*2417A**	17,400	TDR&TXV	14.00		11.70	17,300	3.58	10,300	2.38	7.9	58CV(A,X)090–16
	CNPH*2417A**	17,300	TDR&TXV	14.00		11.70	17,300	3.56	10,300	2.38	7.9	58MVB040–14
	CNPH*2417A**	17,300	TDR&TXV	14.00		11.70	17,300	3.58	10,300	2.38	7.9	58MVB060–14
	CNPH*2417A**	17,400	TDR&TXV	14.00		11.70	17,300	3.58	10,300	2.38	7.9	58MVB080–14
	CNPH*2417A**	17,400	TXV		13.00	10.80	18,000	3.54	11,000	2.30	7.8	
	CNPV*1814A**	17,000	TDR&TXV	14.00		11.70	17,100	3.48	10,300	2.34	7.7	58CV(A,X)070–12
	CNPV*1814A**	17,000	TXV		13.00	10.80	18,000	3.48	10,900	2.28	7.7	
	CNPV*2414A**	17,300	TDR&TXV	14.00		11.70	17,300	3.54	10,300	2.38	7.8	58CV(A,X)070–12
	CNPV*2414A**	17,400	TXV		13.00	10.80	18,000	3.54	11,000	2.30	7.8	
	CNPV*2417A**	17,400	TDR&TXV	14.00		11.70	17,300	3.60	10,300	2.38	7.9	58CV(A,X)090–16
	CNPV*2417A**	17,300	TDR&TXV	14.00		11.70	17,300	3.56	10,300	2.38	7.9	58MVB060–14
	CNPV*2417A**	17,400	TXV		13.00	10.80	18,000	3.54	11,000	2.30	7.8	
	CSPH*2412A**	17,300	TDR&TXV	14.00		11.70	17,300	3.56	10,300	2.38	7.9	58CV(A,X)070–12
	CSPH*2412A**	17,300	TDR&TXV	14.00		12.00	17,300	3.58	10,300	2.38	7.9	58CV(A,X)090–16
	CSPH*2412A**	17,300	TDR&TXV	14.00		11.70	17,300	3.58	10,300	2.38	7.9	58MVB040–14
	CSPH*2412A**	17,300	TDR&TXV	14.00		12.00	17,300	3.58	10,300	2.38	7.9	58MVB060–14
	CSPH*2412A**	17,300	TDR&TXV	14.00		11.70	17,300	3.58	10,400	2.38	7.9	58MVB080–14
	CSPH*2412A**	17,400	TXV		13.00	10.80	17,800	3.50	11,000	2.32	7.8	
	*FY4ANF024	22,600	TDR&TXV	13.00		10.50	24,000	3.54	15,000	2.48	8.2	
	FF1ENP024	22,800	TDR&TXV	13.00		10.70	24,000	3.56	15,200	2.46	8.2	
	FF1ENP030	22,800	TDR&TXV	13.00		10.40	24,200	3.56	15,100	2.48	8.0	
	FV4BNF002	23,200	TDR&TXV	14.00		11.70	23,200	3.80	14,400	2.66	8.5	
	FV4BNF003	23,400	TDR&TXV	14.00		12.00	23,000	3.78	14,300	2.66	8.5	
	FX4CNF024	23,000	TDR&TXV	14.00		11.40	23,800	3.72	14,600	2.60	8.3	
	FX4CNF030	23,400	TDR&TXV	14.00		11.70	23,600	3.84	14,600	2.66	8.5	
	FY4ANF030	23,000	TDR&TXV	13.20		10.60	24,000	3.64	15,100	2.52	8.4	
	CAP**2414A**	22,600	TDR&TXV	14.00		11.50	23,400	3.62	14,300	2.58	8.3	58CV(A,X)070–12
	CAP**2414A**	22,800	TXV		13.00	10.50	24,400	3.60	15,100	2.50	8.3	
24–30	CAP**2417A**	22,800	TDR&TXV	14.00		11.70	23,400	3.66	14,300	2.60	8.4	58CV(A,X)090–16
	CAP**2417A**	22,800	TDR&TXV	14.00		11.70	23,400	3.64	14,300	2.58	8.4	58MVB060–14
	CAP**2417A**	22,800	TXV		13.00	10.50	24,400	3.60	15,100	2.50	8.3	
	CAP**3014A**	23,000	TDR&TXV	14.00		11.70	23,000	3.64	14,400	2.60	8.4	58CV(A,X)070–12
	CAP**3014A**	23,000	TXV		13.00	10.60	23,400	3.56	15,200	2.52	8.3	
	CAP**3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,300	2.62	8.5	58CV(A,X)090–16
	CAP**3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,300	2.62	8.5	58MVB060–14
	CAP**3017A**	23,000	TXV		13.00	10.60	23,400	3.56	15,200	2.52	8.3	
	CNPF*2418A**	22,800	TXV		13.00	10.50	24,400	3.68	15,200	2.52	8.5	
	CNPH*2417A**	22,600	TDR&TXV	14.00		11.50	23,600	3.68	14,400	2.58	8.4	58CV(A,X)070–12

See note on pg. 17

COMBINATION RATINGS CONTINUED

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									Furnace Model
			Cooling				Heating					
							High Temp		Low Temp			
			Factory Enhance	Standard Rating	SEER TDR	EER	E Capacity	E COP	H Capacity	H COP	HSPF	
24–30	CNPH*2417A**	22,800	TDR&TXV	14.00		11.60	23,600	3.72	14,400	2.62	8.5	58CV(A,X)090–16
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58CV(A,X)110–20
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58CV(A,X)135–22
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.72	14,400	2.60	8.5	58CV(A,X)155–22
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58MVB040–14
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58MVB060–14
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58MVB080–14
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.70	14,400	2.60	8.5	58MVB080–20
	CNPH*2417A**	22,800	TDR&TXV	14.00		11.50	23,600	3.72	14,400	2.60	8.5	58MVB100–20
	CNPH*2417A**	22,600	TDR&TXV	14.00		11.50	23,600	3.66	14,400	2.58	8.4	58MVB120–20
	CNPH*2417A**	22,800	TXV		13.00	10.50	24,400	3.68	15,200	2.52	8.5	
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.66	14,300	2.60	8.5	58CV(A,X)070–12
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.70	14,300	2.62	8.5	58CV(A,X)090–16
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.70	14,400	2.62	8.5	58CV(A,X)110–20
	CNPH*3017A**	2,300	TDR&TXV	14.00		11.70	23,000	3.70	14,400	2.62	8.5	58CV(A,X)135–22
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.70	14,300	2.64	8.5	58CV(A,X)155–22
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,400	2.62	8.5	58MVB040–14
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,300	2.62	8.5	58MVB060–14
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,400	2.62	8.7	58MVB080–14
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,400	2.62	8.5	58MVB080–20
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.70	14,400	2.62	8.5	58MVB100–20
	CNPH*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.66	14,300	2.60	8.5	58MVB120–20
	CNPH*3017A**	23,000	TXV		13.00	10.60	23,400	3.56	15,200	2.52	8.3	
	CNPV*2414A**	22,600	TDR&TXV	14.00		11.50	23,400	3.68	14,400	2.58	8.4	58CV(A,X)070–12
	CNPV*2414A**	22,800	TXV		13.00	10.50	24,400	3.68	15,200	2.52	8.5	
	CNPV*2417A**	22,800	TDR&TXV	14.00		11.50	23,400	3.72	14,400	2.62	8.5	58CV(A,X)090–16
	CNPV*2417A**	22,800	TDR&TXV	14.00		11.50	23,400	3.70	14,400	2.60	8.5	58MVB060–14
	CNPV*2417A**	22,800	TXV		13.00	10.50	24,400	3.68	15,200	2.52	8.5	
	CNPV*3014A**	23,000	TDR&TXV	14.00		11.70	23,000	3.66	14,400	2.60	8.4	58CV(A,X)070–12
	CNPV*3014A**	23,000	TXV		13.00	10.60	23,400	3.56	15,200	2.52	8.3	
	CNPV*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.70	14,300	2.62	8.5	58CV(A,X)090–16
	CNPV*3017A**	23,000	TDR&TXV	14.00		11.70	23,000	3.68	14,300	2.62	8.5	58MVB060–14
	CNPV*3017A**	23,000	TXV		13.00	10.60	23,400	3.56	15,200	2.52	8.3	
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.60	23,400	3.70	14,400	2.60	8.5	58CV(A,X)070–12
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.70	23,400	3.74	14,400	2.62	8.6	58CV(A,X)090–16
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.50	23,400	3.72	14,500	2.60	8.5	58CV(A,X)110–20
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.70	23,400	3.74	14,500	2.60	8.6	58CV(A,X)135–22
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.70	23,400	3.74	14,400	2.62	8.6	58CV(A,X)155–22
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.50	23,400	3.72	14,500	2.60	8.5	58MVB040–14
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.70	23,400	3.72	14,400	2.60	8.5	58MVB060–14
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.50	23,400	3.74	14,500	2.60	8.5	58MVB080–14
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.60	23,400	3.72	14,400	2.60	8.5	58MVB080–20
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.70	23,400	3.74	14,500	2.62	8.6	58MVB100–20
	CSPH*2412A**	22,600	TDR&TXV	14.00		11.50	23,400	3.70	14,400	2.58	8.5	58MVB120–20
	CSPH*2412A**	22,800	TXV		13.00	10.60	24,200	3.68	15,200	2.54	8.5	
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.64	14,400	2.60	8.4	58CV(A,X)070–12
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.68	14,400	2.62	8.5	58CV(A,X)090–16
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.68	14,400	2.62	8.5	58CV(A,X)110–20
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.68	14,400	2.62	8.5	58CV(A,X)135–22
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.68	14,400	2.62	8.5	58CV(A,X)155–22
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.66	14,400	2.60	8.5	58MVB040–14
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.66	14,400	2.60	8.5	58MVB060–14
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.66	14,400	2.60	8.5	58MVB080–14
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.66	14,400	2.60	8.5	58MVB080–20
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.68	14,400	2.62	8.5	58MVB100–20
	CSPH*3012A**	23,000	TDR&TXV	14.00		11.70	22,800	3.64	14,400	2.60	8.4	58MVB120–20
	CSPH*3012A**	23,000	TXV		13.00	10.60	23,200	3.56	15,200	2.52	8.3	
→	*FY4ANF030	29,200	TDR&TXV	13.00		10.10	31,800	3.46	21,200	2.56	8.3	
→	FF1ENP030	29,000	TDR&TXV	13.00		10.00	31,800	3.42	21,200	2.54	8.2	
30–30	FF1ENP036	29,600	TDR&TXV	13.00		10.20	32,000	3.48	21,400	2.58	8.3	
	FV4BNF002	29,600	TDR&TXV	14.00		11.00	31,000	3.56	20,600	2.66	8.4	
	FV4BNF003	29,800	TDR&TXV	14.00		11.20	30,800	3.56	20,400	2.68	8.5	
	FV4BNF005	30,600	TDR&TXV	14.00		11.60	30,800	3.80	20,600	2.78	8.9	
	FX4CN(B,F)036	30,000	TDR&TXV	14.00		10.90	31,600	3.64	21,000	2.68	8.6	

See note on pg. 17

COMBINATION RATINGS CONTINUED

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									
			Cooling				Heating					
							High Temp		Low Temp			
			Factory Enhance	Standard Rating	SEER TDR	EER	E Capacity	E COP	H Capacity	H COP	HSPF	Furnace Model
30 – 30	CSPH*3012A**	29,200	TDR&TXV	14.00		11.00	30,800	3.50	20,600	2.64	8.3	58CV(A,X)135 – 22
	CSPH*3012A**	29,200	TDR&TXV	14.00		11.00	30,800	3.50	20,600	2.64	8.3	58CV(A,X)155 – 22
	CSPH*3012A**	29,200	TDR&TXV	13.50		10.80	31,000	3.46	20,600	2.62	8.3	58MVB040 – 14
	CSPH*3012A**	29,200	TDR&TXV	14.00		10.90	30,800	3.46	20,600	2.62	8.3	58MVB060 – 14
	CSPH*3012A**	29,200	TDR&TXV	13.50		10.80	31,000	3.48	20,600	2.62	8.3	58MVB080 – 14
	CSPH*3012A**	29,200	TDR&TXV	14.00		10.90	31,000	3.48	20,600	2.62	8.3	58MVB080 – 20
	CSPH*3012A**	29,200	TDR&TXV	14.00		10.90	31,000	3.48	20,600	2.62	8.3	58MVB100 – 20
	CSPH*3012A**	29,200	TDR&TXV	14.00		11.00	30,800	3.46	20,400	2.62	8.3	58MVB120 – 20
	CSPH*3012A**	29,600	TXV		13.00	10.20	32,200	3.52	21,400	2.58	8.4	
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.10	30,800	3.58	20,600	2.68	8.5	58CV(A,X)070 – 12
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.20	31,000	3.60	20,600	2.70	8.5	58CV(A,X)090 – 16
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.20	30,800	3.62	20,600	2.70	8.6	58CV(A,X)110 – 20
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.30	31,000	3.62	20,600	2.70	8.6	58CV(A,X)135 – 22
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.30	31,000	3.64	20,600	2.70	8.6	58CV(A,X)155 – 22
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.10	30,800	3.58	20,600	2.66	8.5	58MVB040 – 14
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.10	30,800	3.58	20,600	2.68	8.5	58MVB060 – 14
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.10	30,800	3.60	20,600	2.68	8.5	58MVB080 – 14
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.10	30,800	3.58	20,600	2.68	8.5	58MVB080 – 20
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.20	31,000	3.60	20,600	2.68	8.5	58MVB100 – 20
	CSPH*3612A**	29,400	TDR&TXV	14.00		11.20	31,000	3.58	20,600	2.68	8.5	58MVB120 – 20
	CSPH*3612A**	29,600	TXV		13.00	10.30	32,000	3.64	21,600	2.64	8.6	
→	*FY4ANF042	34,000	TDR&TXV	13.00		10.60	35,800	3.56	22,200	2.42	8.1	
→	FF1ENP036	33,600	TDR&TXV	13.00		10.70	35,400	3.44	21,800	2.40	7.9	
36 – 30	FV4BNF002	33,400	TDR&TXV	13.50		11.20	34,800	3.54	21,200	2.46	8.1	
	FV4BNF003	33,800	TDR&TXV	14.00		11.50	34,400	3.56	20,800	2.50	8.1	
	FV4BNF005	35,000	TDR&TXV	14.00		12.00	33,800	3.76	21,000	2.58	8.6	
	FX4CN(B,F)036	34,000	TDR&TXV	13.50		11.20	35,200	3.62	21,400	2.50	8.3	
	FX4CN(B,F)042	34,800	TDR&TXV	14.00		11.50	35,200	3.76	21,600	2.54	8.5	
	FY4ANF036	33,000	TDR&TXV	13.00		10.50	35,200	3.36	21,600	2.34	7.7	
	CAP**3614A**	32,400	TDR&TXV	13.50		11.00	34,600	3.44	21,000	2.42	7.9	58CV(A,X)070 – 12
	CAP**3614A**	32,400	TXV		13.00	10.50	35,200	3.40	21,800	2.38	7.8	
	CAP**3617A**	33,400	TDR&TXV	14.00		11.50	34,400	3.48	21,000	2.46	8.0	58CV(A,X)090 – 16
	CAP**3617A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.44	7.9	58MVB060 – 14
	CAP**3617A**	33,400	TXV		13.00	10.50	35,600	3.46	22,000	2.40	7.9	
	CAP**3621A**	33,600	TDR&TXV	14.00		11.50	34,400	3.50	21,000	2.46	8.0	58CV(A,X)110 – 20
	CAP**3621A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB080 – 14
	CAP**3621A**	33,400	TDR&TXV	13.50		11.30	34,400	3.48	21,000	2.44	8.0	58MVB080 – 20
	CAP**3621A**	33,400	TDR&TXV	14.00		11.40	34,400	3.48	21,000	2.46	8.0	58MVB100 – 20
	CAP**3621A**	33,400	TXV		13.00	10.50	35,600	3.46	22,000	2.40	7.9	
	CAP**4221A**	33,800	TDR&TXV	14.00		11.50	34,600	3.56	21,000	2.48	8.1	58CV(A,X)110 – 20
	CAP**4221A**	33,400	TDR&TXV	13.50		11.20	34,600	3.48	21,000	2.44	8.0	58MVB080 – 14
	CAP**4221A**	33,600	TDR&TXV	14.00		11.50	34,600	3.52	21,000	2.46	8.0	58MVB080 – 20
	CAP**4221A**	33,600	TDR&TXV	14.00		11.50	34,600	3.54	21,000	2.46	8.1	58MVB100 – 20
	CAP**4221A**	33,800	TXV		13.00	10.60	35,800	3.52	22,000	2.42	8.0	
	CAP**4224A**	33,800	TDR&TXV	14.00		11.50	34,400	3.58	20,800	2.50	8.1	58CV(A,X)135 – 22
	CAP**4224A**	33,800	TDR&TXV	14.00		11.70	34,400	3.60	20,800	2.52	8.2	58CV(A,X)155 – 22
	CAP**4224A**	33,600	TDR&TXV	13.50		11.20	34,600	3.50	21,000	2.44	8.0	58MVB040 – 14
	CAP**4224A**	33,600	TDR&TXV	14.00		11.50	34,400	3.54	21,000	2.48	8.1	58MVB120 – 20
	CAP**4224A**	33,800	TXV		13.00	10.60	35,800	3.52	22,000	2.42	8.0	
	CNPF*3618A**	33,400	TXV		13.00	10.50	35,600	3.44	22,000	2.38	7.9	
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.42	21,000	2.42	7.9	58CV(A,X)070 – 12
	CNPH*3617A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.44	7.9	58CV(A,X)090 – 16
	CNPH*3617A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.44	8.0	58CV(A,X)110 – 20
	CNPH*3617A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.44	8.0	58CV(A,X)135 – 22
	CNPH*3617A**	33,400	TDR&TXV	14.00		11.50	34,400	3.48	21,000	2.46	8.0	58CV(A,X)155 – 22
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.10	34,400	3.42	21,200	2.40	7.8	58MVB040 – 14
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB060 – 14
	CNPH*3617A**	33,000	TDR&TXV	13.50		11.00	34,400	3.40	21,200	2.40	7.8	58MVB080 – 14
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB080 – 20
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.44	7.9	58MVB100 – 20
	CNPH*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB120 – 20

See note on pg. 17

COMBINATION RATINGS CONTINUED

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									
			Cooling				Heating					
							High Temp		Low Temp			
			Factory Enhance	Standard Rating	SEER TDR	EER	E Capacity	E COP	H Capacity	H COP	HSPF	Furnace Model
	CNPH*3617A**	33,400	TXV		13.00	10.50	35,600	3.44	22,000	2.38	7.9	
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.50	34,600	3.54	21,000	2.48	8.1	58CV(A,X)070–12
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.70	34,400	3.58	20,800	2.50	8.2	58CV(A,X)090–16
	CNPH*4221A**	33,800	TDR&TXV	14.00		11.70	34,400	3.60	20,800	2.52	8.2	58CV(A,X)110–20
	CNPH*4221A**	33,800	TDR&TXV	14.00		11.70	34,400	3.62	20,800	2.52	8.2	58CV(A,X)135–22
	CNPH*4221A**	33,800	TDR&TXV	14.00		11.70	34,400	3.62	20,800	2.54	8.3	58CV(A,X)155–22
	CNPH*4221A**	33,400	TDR&TXV	14.00		11.50	34,600	3.54	21,000	2.48	8.1	58MVB040–14
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.60	34,400	3.56	21,000	2.50	8.1	58MVB060–14
	CNPH*4221A**	33,400	TDR&TXV	14.00		11.50	34,400	3.54	21,000	2.48	8.1	58MVB080–14
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.50	34,600	3.56	21,000	2.48	8.1	58MVB080–20
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.50	34,400	3.58	21,000	2.50	8.2	58MVB100–20
	CNPH*4221A**	33,600	TDR&TXV	14.00		11.70	34,400	3.58	20,800	2.50	8.2	58MVB120–20
	CNPH*4221A**	33,800	TXV		13.00	10.60	35,800	3.54	22,000	2.42	8.1	
	CNPV*3617A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.44	7.9	58CV(A,X)090–16
	CNPV*3617A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB060–14
	CNPV*3617A**	33,400	TXV		13.00	10.50	35,600	3.44	22,000	2.38	7.9	
	CNPV*3621A**	33,600	TDR&TXV	13.50		11.20	34,400	3.48	21,000	2.44	8.0	58CV(A,X)110–20
	CNPV*3621A**	33,200	TDR&TXV	13.50		11.00	34,400	3.40	21,000	2.40	7.8	58MVB080–14
	CNPV*3621A**	33,200	TDR&TXV	13.50		11.20	34,400	3.44	21,000	2.42	7.9	58MVB080–20
	CNPV*3621A**	33,400	TDR&TXV	13.50		11.20	34,400	3.46	21,000	2.42	7.9	58MVB100–20
	CNPV*3621A**	33,400	TXV		13.00	10.50	35,600	3.44	22,000	2.38	7.9	
	CNPV*4221A**	33,800	TDR&TXV	14.00		11.70	34,400	3.60	20,800	2.52	8.2	58CV(A,X)110–20
	CNPV*4221A**	33,400	TDR&TXV	14.00		11.50	34,400	3.54	21,000	2.48	8.1	58MVB080–14
	CNPV*4221A**	33,600	TDR&TXV	14.00		11.50	34,600	3.56	21,000	2.48	8.1	58MVB080–20
36–30	CNPV*4221A**	33,600	TDR&TXV	14.00		11.50	34,400	3.58	21,000	2.50	8.2	58MVB100–20
	CNPV*4221A**	33,800	TXV		13.00	10.60	35,800	3.54	22,000	2.42	8.1	
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.58	21,200	2.48	8.2	58CV(A,X)070–12
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.62	21,000	2.50	8.2	58CV(A,X)090–16
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.64	21,200	2.52	8.3	58CV(A,X)110–20
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.64	21,000	2.52	8.3	58CV(A,X)135–22
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.70	34,600	3.66	21,000	2.54	8.3	58CV(A,X)155–22
	CSPH*3612A**	33,400	TDR&TXV	13.50		11.20	34,600	3.56	21,200	2.48	8.1	58MVB040–14
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.60	21,200	2.50	8.2	58MVB060–14
	CSPH*3612A**	33,400	TDR&TXV	13.50		11.20	34,600	3.54	21,200	2.46	8.1	58MVB080–14
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.60	21,200	2.48	8.2	58MVB080–20
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.60	21,200	2.50	8.2	58MVB100–20
	CSPH*3612A**	33,400	TDR&TXV	14.00		11.50	34,600	3.60	21,000	2.50	8.2	58MVB120–20
	CSPH*3612A**	33,400	TXV		13.00	10.70	35,600	3.62	22,200	2.44	8.2	
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.50	34,600	3.64	21,200	2.50	8.3	58CV(A,X)070–12
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.50	34,600	3.68	21,000	2.52	8.4	58CV(A,X)090–16
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.50	34,600	3.70	21,200	2.54	8.4	58CV(A,X)110–20
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.70	34,600	3.70	21,000	2.54	8.4	58CV(A,X)135–22
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.70	34,600	3.74	21,000	2.56	8.4	58CV(A,X)155–22
	CSPH*4212A**	33,600	TDR&TXV	14.00		11.50	34,600	3.64	21,200	2.48	8.3	58MVB040–14
	CSPH*4212A**	33,600	TDR&TXV	14.00		11.50	34,600	3.66	21,200	2.52	8.3	58MVB060–14
	CSPH*4212A**	33,600	TDR&TXV	14.00		11.50	34,600	3.62	21,200	2.48	8.2	58MVB080–14
	CSPH*4212A**	33,600	TDR&TXV	14.00		11.50	34,600	3.66	21,200	2.50	8.3	58MVB080–20
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.50	34,600	3.68	21,200	2.52	8.3	58MVB100–20
	CSPH*4212A**	33,800	TDR&TXV	14.00		11.50	34,600	3.66	21,200	2.52	8.3	58MVB120–20
	CSPH*4212A**	33,800	TXV		13.20	10.80	35,800	3.66	22,200	2.46	8.3	
→	*FY4ANF042	40,500	TDR&TXV	13.00		10.40	42,000	3.54	26,400	2.46	8.1	
	FV4BNB006	42,500	TDR&TXV	14.00		12.40	39,500	3.68	25,800	2.56	8.4	
	FV4BNF003	40,000	TDR&TXV	14.00		11.50	41,000	3.42	25,600	2.40	7.9	
	FV4BNF005	42,000	TDR&TXV	14.00		12.10	40,500	3.64	25,800	2.50	8.3	
42–30	FX4BNF042	40,500	TDR&TXV	13.00		10.40	42,500	3.54	26,400	2.46	8.1	
	FX4BNF048	41,500	TDR&TXV	13.20		10.60	41,000	3.56	26,600	2.50	8.2	
	FX4CN(B,F)042	41,500	TDR&TXV	14.00		11.20	42,000	3.70	25,800	2.56	8.4	
	FX4CN(B,F)048	42,500	TDR&TXV	14.00		11.70	40,000	3.76	25,800	2.66	8.7	
	FY4ANF048	41,500	TDR&TXV	13.20		10.60	41,000	3.56	26,600	2.50	8.2	

See note on pg. 17

COMBINATION RATINGS CONTINUED

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									
			Cooling				Heating					
							High Temp		Low Temp			
			Factory Enhance	Standard Rating	SEER TDR	EER	E Capacity	E COP	H Capacity	H COP	HSPF	Furnace Model
42–30	CNPV*4824A**	40,500	TDR&TXV	13.50		11.20	41,000	3.60	25,400	2.52	8.2	58MVB040–14
	CNPV*4824A**	40,500	TDR&TXV	14.00		11.40	41,000	3.64	25,200	2.56	8.3	58MVB120–20
	CNPV*4824A**	41,000	TXV		13.00	10.60	42,000	3.64	26,400	2.52	8.3	
	CSPH*4212A**	39,500	TDR&TXV	13.50		11.10	41,500	3.60	25,600	2.52	8.2	58CV(A,X)070–12
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.40	41,000	3.66	25,400	2.56	8.4	58CV(A,X)090–16
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.40	41,000	3.66	25,400	2.58	8.4	58CV(A,X)110–20
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.50	41,000	3.70	25,200	2.60	8.4	58CV(A,X)135–22
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.60	41,000	3.68	25,200	2.60	8.4	58CV(A,X)155–22
	CSPH*4212A**	39,500	TDR&TXV	13.50		11.10	41,500	3.58	25,600	2.52	8.2	58MVB040–14
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.30	41,500	3.62	25,400	2.54	8.3	58MVB060–14
	CSPH*4212A**	39,500	TDR&TXV	13.50		11.10	41,500	3.58	25,600	2.52	8.2	58MVB080–14
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.20	41,500	3.62	25,600	2.54	8.3	58MVB080–20
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.30	41,500	3.64	25,400	2.56	8.3	58MVB100–20
	CSPH*4212A**	40,000	TDR&TXV	14.00		11.40	41,500	3.62	25,400	2.56	8.3	58MVB120–20
	CSPH*4212A**	40,000	TXV		13.00	10.70	42,500	3.66	26,400	2.52	8.3	
	CSPH*4812A**	41,000	TDR&TXV	13.50		11.10	41,500	3.64	25,600	2.54	8.3	58CV(A,X)070–12
	CSPH*4812A**	41,000	TDR&TXV	14.00		11.40	41,000	3.70	25,400	2.58	8.4	58CV(A,X)090–16
	CSPH*4812A**	41,000	TDR&TXV	14.00		11.40	41,000	3.70	25,400	2.58	8.5	58CV(A,X)110–20
	CSPH*4812A**	41,000	TDR&TXV	14.00		11.60	41,000	3.74	25,400	2.60	8.5	58CV(A,X)135–22
	CSPH*4812A**	41,000	TDR&TXV	14.00		11.60	41,000	3.72	25,200	2.60	8.5	58CV(A,X)155–22
	CSPH*4812A**	40,500	TDR&TXV	13.50		11.20	41,500	3.62	25,600	2.52	8.3	58MVB040–14
	CSPH*4812A**	40,500	TDR&TXV	14.00		11.30	41,000	3.66	25,400	2.56	8.4	58MVB060–14
	CSPH*4812A**	40,500	TDR&TXV	13.50		11.10	41,500	3.62	25,600	2.52	8.3	58MVB080–14
	CSPH*4812A**	40,500	TDR&TXV	14.00		11.30	41,000	3.66	25,600	2.56	8.4	58MVB080–20
	CSPH*4812A**	40,500	TDR&TXV	14.00		11.30	41,000	3.68	25,400	2.56	8.4	58MVB100–20
	CSPH*4812A**	40,500	TDR&TXV	14.00		11.40	41,000	3.68	25,400	2.56	8.4	58MVB120–20
	CSPH*4812A**	41,000	TXV		13.00	10.70	42,000	3.68	26,400	2.52	8.4	
→	*FY4ANF048	46,500	TDR&TXV	13.00		10.8	48,500	3.60	30,800	2.58	8.3	
48–30	FV4BNB006	48,000	TDR&TXV	14.00		12.50	46,000	3.86	29,400	2.78	8.8	
	FV4BNF005	47,000	TDR&TXV	14.00		12.20	47,500	3.78	29,400	2.72	8.6	
	FX4BNB060	47,500	TDR&TXV	13.00		11.20	45,000	3.52	30,800	2.62	8.4	
	FX4BNF048	46,500	TDR&TXV	13.00		11.10	48,500	3.60	30,800	2.58	8.3	
	FX4CN(B,F)048	47,500	TDR&TXV	14.00		11.70	47,500	3.78	30,000	2.70	8.6	
	FX4CN(B,F)060	48,000	TDR&TXV	14.00		12.00	44,000	3.74	30,000	2.76	8.7	
	FY4ANB060	47,500	TDR&TXV	13.50		11.00	45,000	3.52	30,800	2.62	8.4	
	CAP**4817A**	45,000	TDR&TXV	14.00		11.50	47,500	3.70	29,800	2.62	8.4	58CV(A,X)090–16
	CAP**4817A**	45,000	TXV		13.00	10.80	48,000	3.66	30,200	2.60	8.4	
	CAP**4821A**	45,500	TDR&TXV	14.00		11.50	48,000	3.68	29,600	2.62	8.4	58CV(A,X)110–20
	CAP**4821A**	45,500	TDR&TXV	14.00		11.50	48,500	3.62	29,800	2.58	8.3	58MVB080–20
	CAP**4821A**	45,500	TDR&TXV	14.00		11.50	48,000	3.64	29,600	2.60	8.3	58MVB100–20
	CAP**4821A**	46,000	TXV		13.00	10.80	49,000	3.66	30,400	2.60	8.4	
	CAP**4824A**	45,500	TDR&TXV	14.00		11.70	48,000	3.70	29,400	2.64	8.5	58CV(A,X)135–22
	CAP**4824A**	46,000	TDR&TXV	14.00		11.50	48,000	3.74	29,400	2.66	8.5	58CV(A,X)155–22
	CAP**4824A**	45,500	TDR&TXV	14.00		11.50	48,000	3.64	29,600	2.60	8.3	58MVB120–20
	CAP**4824A**	46,000	TXV		13.00	10.80	49,000	3.68	30,400	2.60	8.4	
	CAP**6021A**	45,500	TDR&TXV	14.00		11.70	46,000	3.68	29,600	2.66	8.5	58CV(A,X)110–20
	CAP**6021A**	45,500	TDR&TXV	14.00		11.70	46,000	3.64	29,800	2.62	8.4	58MVB080–20
	CAP**6021A**	45,500	TDR&TXV	14.00		11.70	46,000	3.66	29,600	2.64	8.4	58MVB100–20
	CAP**6021A**	46,000	TXV		13.00	10.80	45,000	3.50	30,600	2.62	8.3	
	CAP**6024A**	47,000	TDR&TXV	14.00		11.70	46,000	3.70	29,600	2.68	8.5	58CV(A,X)135–22
	CAP**6024A**	47,000	TDR&TXV	14.00		12.00	46,000	3.72	29,400	2.68	8.6	58CV(A,X)155–22
	CAP**6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.64	29,600	2.64	8.4	58MVB120–20
	CAP**6024A**	47,000	TXV		13.00	10.80	45,000	3.50	30,600	2.62	8.3	
	CNPF*4818A**	45,000	TXV		13.00	10.80	48,500	3.50	30,000	2.54	8.1	
	CNPH*4821A**	44,500	TDR&TXV	14.00		11.50	48,000	3.62	29,600	2.60	8.3	58CV(A,X)090–16
	CNPH*4821A**	44,500	TDR&TXV	14.00		11.50	48,000	3.64	29,600	2.62	8.4	58CV(A,X)110–20
	CNPH*4821A**	45,000	TDR&TXV	14.00		11.70	48,000	3.68	29,400	2.64	8.4	58CV(A,X)135–22
	CNPH*4821A**	45,000	TDR&TXV	14.00		11.70	48,000	3.70	29,400	2.66	8.5	58CV(A,X)155–22
	CNPH*4821A**	44,500	TDR&TXV	14.00		11.50	48,500	3.60	29,600	2.60	8.3	58MVB080–20
	CNPH*4821A**	44,500	TDR&TXV	14.00		11.50	48,000	3.62	29,600	2.60	8.3	58MVB100–20
	CNPH*4821A**	44,500	TDR&TXV	14.00		11.50	48,000	3.62	29,600	2.60	8.3	58MVB120–20

See note on pg. 17

COMBINATION RATINGS CONTINUED

Unit Size – Series	Indoor Model	Cooling Capacity	ARI Standard Ratings									
			Cooling				Heating					
							High Temp		Low Temp			
			Factory Enhance	Standard Rating	SEER TDR	EER	E Capacity	E COP	H Capacity	H COP	HSPF	Furnace Model
48–30	CNPH*4821A**	45,000	TXV		13.00	10.80	49,000	3.68	30,400	2.60	8.4	
	CNPH*6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.68	29,600	2.64	8.4	58CV(A,X)090–16
	CNPH*6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.70	29,600	2.66	8.5	58CV(A,X)110–20
	CNPH*6024A**	46,500	TDR&TXV	14.00		12.00	46,000	3.74	29,400	2.68	8.5	58CV(A,X)135–22
	CNPH*6024A**	47,000	TDR&TXV	14.00		12.00	46,000	3.76	29,400	2.68	8.6	58CV(A,X)155–22
	CNPH*6024A**	46,500	TDR&TXV	14.00		11.50	46,000	3.66	29,800	2.62	8.4	58MVB080–20
	CNPH*6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.68	29,600	2.64	8.4	58MVB100–20
	CNPH*6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.68	29,600	2.64	8.4	58MVB120–20
	CNPH*6024A**	47,000	TXV		13.00	10.80	45,000	3.66	30,600	2.62	8.5	
	CNPV*4821A**	45,500	TDR&TXV	14.00		11.50	48,000	3.64	29,600	2.62	8.4	58CV(A,X)110–20
	CNPV*4821A**	45,500	TDR&TXV	14.00		11.50	48,500	3.60	29,600	2.60	8.3	58MVB080–20
	CNPV*4821A**	45,500	TDR&TXV	14.00		11.50	48,000	3.62	29,600	2.60	8.3	58MVB100–20
	CNPV*4821A**	46,000	TXV		13.00	10.80	49,000	3.68	30,400	2.60	8.4	
	CNPV*4824A**	45,500	TDR&TXV	14.00		11.70	48,000	3.68	29,400	2.64	8.4	58CV(A,X)135–22
	CNPV*4824A**	46,000	TDR&TXV	14.00		11.50	48,000	3.70	29,400	2.66	8.5	58CV(A,X)155–22
	CNPV*4824A**	45,500	TDR&TXV	14.00		11.50	48,000	3.62	29,600	2.60	8.3	58MVB120–20
	CNPV*4824A**	46,000	TXV		13.00	10.80	49,000	3.68	30,400	2.60	8.4	
	CNPV*6024A**	46,500	TDR&TXV	14.00		12.00	46,000	3.74	29,400	2.68	8.5	58CV(A,X)135–22
	CNPV*6024A**	47,000	TDR&TXV	14.00		12.00	46,000	3.76	29,400	2.68	8.6	58CV(A,X)155–22
	CNPV*6024A**	46,500	TDR&TXV	14.00		11.70	46,000	3.68	29,600	2.64	8.4	58MVB120–20
	CNPV*6024A**	47,000	TXV		13.00	10.80	45,000	3.66	30,600	2.62	8.5	
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.50	48,000	3.68	29,800	2.62	8.4	58CV(A,X)090–16
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.50	48,000	3.70	29,600	2.62	8.4	58CV(A,X)110–20
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.70	48,000	3.72	29,600	2.64	8.5	58CV(A,X)135–22
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.70	48,000	3.76	29,400	2.66	8.6	58CV(A,X)155–22
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.50	48,500	3.66	29,800	2.60	8.4	58MVB080–20
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.50	48,000	3.68	29,800	2.62	8.4	58MVB100–20
	CSPH*4812A**	45,500	TDR&TXV	14.00		11.50	48,000	3.66	29,600	2.62	8.4	58MVB120–20
	CSPH*4812A**	46,000	TXV		13.00	10.80	49,000	3.72	30,600	2.62	8.5	
	CSPH*6012A**	46,500	TDR&TXV	14.00		11.70	46,000	3.74	29,600	2.66	8.5	58CV(A,X)090–16
	CSPH*6012A**	47,000	TDR&TXV	14.00		11.70	46,000	3.76	29,600	2.68	8.6	58CV(A,X)110–20
	CSPH*6012A**	47,000	TDR&TXV	14.00		12.00	46,000	3.78	29,600	2.70	8.6	58CV(A,X)135–22
	CSPH*6012A**	47,000	TDR&TXV	14.00		12.00	46,000	3.80	29,400	2.70	8.7	58CV(A,X)155–22
	CSPH*6012A**	46,500	TDR&TXV	14.00		11.70	46,000	3.70	29,800	2.64	8.5	58MVB080–20
	CSPH*6012A**	46,500	TDR&TXV	14.00		11.70	46,000	3.72	29,800	2.66	8.5	58MVB100–20
	CSPH*6012A**	46,500	TDR&TXV	14.00		11.70	46,000	3.72	29,600	2.66	8.5	58MVB120–20
	CSPH*6012A**	47,000	TXV		13.00	10.80	45,000	3.68	30,600	2.64	8.5	
60–30	*FY4ANB060	59,500	TDR&TXV	13.00		10.8	60,000	3.62	38,500	2.56	8.0	
	FV4BNB006	60,000	TDR&TXV	14.00		11.50	58,500	3.74	36,200	2.68	8.2	
	FX4CN(B,F)060	60,000	TDR&TXV	14.00		12.00	58,500	3.74	36,200	2.68	8.3	
	CAP**6021A**	58,000	TDR&TXV	13.50		11.20	56,500	3.48	36,000	2.52	7.8	58CV(A,X)110–20
	CAP**6021A**	59,000	TXV		13.00	10.80	58,000	3.48	36,400	2.52	7.8	
	CAP**6024A**	59,000	TDR&TXV	13.50		11.50	57,500	3.50	35,800	2.54	7.8	58CV(A,X)135–22
	CAP**6024A**	59,000	TDR&TXV	14.00		11.50	57,500	3.54	35,800	2.56	7.9	58CV(A,X)155–22
	CAP**6024A**	60,000	TXV		13.00	10.80	59,000	3.60	37,000	2.54	8.0	
	CNPH*6024A**	58,500	TDR&TXV	13.50		11.20	57,500	3.46	36,000	2.52	7.7	58CV(A,X)110–20
	CNPH*6024A**	58,500	TDR&TXV	13.50		11.20	57,000	3.48	35,800	2.54	7.8	58CV(A,X)135–22
	CNPH*6024A**	59,000	TDR&TXV	14.00		11.50	57,000	3.52	35,800	2.56	7.8	58CV(A,X)155–22
	CNPH*6024A**	59,500	TXV		13.00	10.80	58,500	3.54	37,600	2.60	8.0	
	CNPV*6024A**	58,500	TDR&TXV	13.50		11.20	57,000	3.48	35,800	2.54	7.8	58CV(A,X)135–22
	CNPV*6024A**	59,000	TDR&TXV	14.00		11.50	57,000	3.52	35,800	2.56	7.8	58CV(A,X)155–22
	CNPV*6024A**	59,500	TXV		13.00	10.80	58,500	3.54	36,800	2.54	7.9	
	CSPH*6012A**	59,000	TDR&TXV	13.50		11.20	57,500	3.52	36,000	2.54	7.8	58CV(A,X)110–20
	CSPH*6012A**	59,000	TDR&TXV	14.00		11.50	57,500	3.56	35,800	2.56	7.9	58CV(A,X)135–22
	CSPH*6012A**	59,000	TDR&TXV	14.00		11.50	57,500	3.58	35,800	2.58	7.9	58CV(A,X)155–22
	CSPH*6012A**	60,000	TXV		13.00	10.80	59,000	3.62	37,000	2.56	8.0	

* Ratings are net values reflecting the effects of circulating fan heat. Supplemental electric heat is not included. Ratings are based on:
Cooling Standard: 80°F (27°C) db 67°F (19°C) wb indoor entering air temperature and 95°F (35°C) db air entering outdoor unit.
High–Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 47°F (8°C) db 43˚F (6°C) wb air entering outdoor unit.
Low–Temp Heating Standard: 70°F (21°C) db indoor entering air temperature and 17°F (±9°C) db 15˚F (±10°C) wb air entering outdoor unit.

SEER — Seasonal Energy Efficiency Ratio
COP — Coefficient of Performance
TDR — Time–Delay Relay
HSPF — Heating Seasonal Performance Factor
EER — Energy Efficiency Ratio

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA324A30 Outdoor Section With FY4ANF024 Indoor Section																			
700	72	26.97	13.80	1.66	25.72	13.32	1.86	24.41	12.81	2.09	23.03	12.29	2.34	21.54	11.73	2.61	19.91	11.13	2.91
	67	24.65	17.15	1.66	23.49	16.65	1.86	22.26	16.12	2.09	20.97	15.57	2.34	19.59	15.00	2.62	18.09	14.38	2.92
	63	22.94	16.60	1.66	21.84	16.09	1.86	20.68	15.56	2.09	19.46	15.01	2.34	18.16	14.43	2.62	16.76	13.81	2.92
	62	22.50	20.46	1.66	21.42	19.93	1.86	20.30	19.36	2.09	19.14	18.75	2.34	17.96	17.96	2.62	16.82	16.82	2.92
	57	21.73	21.73	1.66	20.87	20.87	1.86	19.96	19.96	2.09	19.00	19.00	2.34	17.96	17.96	2.62	16.82	16.82	2.92
800	72	27.42	14.42	1.69	26.13	13.93	1.90	24.76	13.42	2.12	24.27	13.23	2.06	21.80	12.33	2.65	20.12	11.72	2.94
	67	25.09	18.20	1.69	23.88	17.68	1.90	22.60	17.15	2.12	21.27	16.60	2.37	19.84	16.01	2.65	18.29	15.38	2.95
	63	23.37	17.58	1.69	22.22	17.07	1.90	21.02	16.52	2.13	19.76	15.96	2.38	18.41	15.37	2.65	16.96	14.73	2.95
	62	22.96	21.88	1.69	21.86	21.30	1.90	20.72	20.69	2.13	19.67	19.67	2.38	18.57	18.57	2.65	17.37	17.37	2.95
	57	22.57	22.57	1.69	21.66	21.66	1.90	20.70	20.70	2.13	19.67	19.67	2.38	18.57	18.57	2.65	17.37	17.37	2.95
900	72	27.75	15.01	1.73	26.42	14.51	1.93	26.10	14.39	1.86	24.55	13.82	2.09	22.87	13.22	2.36	20.25	12.28	2.98
	67	25.40	19.19	1.73	24.16	18.68	1.93	22.85	18.13	2.16	21.48	17.57	2.41	20.02	16.97	2.69	18.43	16.31	2.98
	63	23.68	18.52	1.73	22.50	17.99	1.93	21.26	17.44	2.16	19.97	16.87	2.41	18.59	16.26	2.69	17.11	15.60	2.99
	62	23.36	23.12	1.73	22.32	22.31	1.93	21.30	21.30	2.16	20.23	20.23	2.41	19.07	19.07	2.69	17.81	17.81	2.99
	57	23.27	23.27	1.73	22.31	22.31	1.93	21.30	21.30	2.16	20.23	20.23	2.41	19.07	19.07	2.69	17.81	17.81	2.99

Cooling Indoor Model	Capacity	Power	Furnace Model
*FY4ANF024	1.00	1.00	
FF1ENP024	1.01	0.99	
FF1ENP030	1.01	1.02	
FV4BNF002	1.03	0.92	
FV4BNF003	1.04	0.91	
FX4CNF024	1.02	0.94	
FX4CNF030	1.04	0.93	
FY4ANF030	1.02	1.01	
CAP**2414A**	1.01	1.01	
CAP**2417A**	1.01	1.01	
CAP**3014A**	1.02	1.01	
CAP**3017A**	1.02	1.01	
CNPF*2418A**	1.01	1.01	
CNPH*2417A**	1.01	1.01	
CNPH*3017A**	1.02	1.01	
CNPV*2414A**	1.01	1.01	
CNPV*2417A**	1.01	1.01	
CNPV*3014A**	1.02	1.01	
CNPV*3017A**	1.02	1.01	
CSPH*2412A**	1.01	1.00	
CSPH*3012A**	1.02	1.01	
CAP**2414A**	1.00	0.91	58CV(A,X)070–12
CAP**3014A**	1.02	0.91	58CV(A,X)070–12
CNPH*2417A**	1.00	0.91	58CV(A,X)070–12
CNPH*3017A**	1.02	0.91	58CV(A,X)070–12
CNPV*2414A**	1.00	0.91	58CV(A,X)070–12
CNPV*3014A**	1.02	0.91	58CV(A,X)070–12
CSPH*2412A**	1.00	0.91	58CV(A,X)070–12
CSPH*3012A**	1.02	0.91	58CV(A,X)070–12
CAP**2417A**	1.01	0.91	58CV(A,X)090–16
CAP**3017A**	1.02	0.91	58CV(A,X)090–16
CNPH*2417A**	1.01	0.91	58CV(A,X)090–16
CNPH*3017A**	1.02	0.91	58CV(A,X)090–16
CNPV*2417A**	1.01	0.92	58CV(A,X)090–16
CNPV*3017A**	1.02	0.91	58CV(A,X)090–16
CSPH*2412A**	1.00	0.90	58CV(A,X)090–16
CSPH*3012A**	1.02	0.91	58CV(A,X)090–16
CNPH*2417A**	1.01	0.92	58CV(A,X)110–20
CNPH*3017A**	1.02	0.91	58CV(A,X)110–20
CSPH*2412A**	1.00	0.91	58CV(A,X)110–20
CSPH*3012A**	1.02	0.91	58CV(A,X)110–20
CNPH*2417A**	1.01	0.92	58CV(A,X)135–22
CNPH*3017A**	0.10	0.09	58CV(A,X)135–22
CSPH*2412A**	1.00	0.90	58CV(A,X)135–22
CSPH*3012A**	1.02	0.91	58CV(A,X)135–22

See notes on pg. 24

Cooling Indoor Model	Capacity	Power	Furnace Model
CNPH*2417A**	1.01	0.92	58CV(A,X)155–22
CNPH*3017A**	1.02	0.91	58CV(A,X)155–22
CSPH*2412A**	1.00	0.90	58CV(A,X)155–22
CSPH*3012A**	1.02	0.91	58CV(A,X)155–22
CNPH*2417A**	1.01	0.92	58MVB040–14
CNPH*3017A**	1.02	0.91	58MVB040–14
CSPH*2412A**	1.00	0.91	58MVB040–14
CSPH*3012A**	1.02	0.91	58MVB040–14
CAP**2417A**	1.01	0.91	58MVB060–14
CAP**3017A**	1.02	0.91	58MVB060–14
CNPH*2417A**	1.01	0.92	58MVB060–14
CNPH*3017A**	1.02	0.91	58MVB060–14
CNPV*2417A**	1.01	0.92	58MVB060–14
CNPV*3017A**	1.02	0.91	58MVB060–14
CSPH*2412A**	1.00	0.90	58MVB060–14
CSPH*3012A**	1.02	0.91	58MVB060–14
CNPH*2417A**	1.01	0.92	58MVB080–14
CNPH*3017A**	1.02	0.91	58MVB080–14
CSPH*2412A**	1.00	0.91	58MVB080–14
CSPH*3012A**	1.02	0.91	58MVB080–14
CNPH*2417A**	1.01	0.92	58MVB080–20
CNPH*3017A**	1.02	0.91	58MVB080–20
CSPH*2412A**	1.00	0.91	58MVB080–20
CSPH*3012A**	1.02	0.91	58MVB080–20
CNPH*2417A**	1.01	0.92	58MVB100–20
CNPH*3017A**	1.02	0.91	58MVB100–20
CSPH*2412A**	1.00	0.90	58MVB100–20
CSPH*3012A**	1.02	0.91	58MVB100–20
CNPH*2417A**	1.00	0.91	58MVB120–20
CNPH*3017A**	1.02	0.91	58MVB120–20
CSPH*2412A**	1.00	0.91	58MVB120–20
CSPH*3012A**	1.02	0.91	58MVB120–20

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA330A30 Outdoor Section With FY4ANF030 Indoor Section																			
875	72	34.73	17.57	2.23	33.11	16.93	2.50	31.41	16.27	2.79	29.62	15.58	3.11	27.66	14.83	3.45	25.48	14.02	3.83
	67	31.78	21.67	2.22	30.31	21.02	2.49	28.75	20.35	2.78	27.09	19.64	3.10	25.29	18.88	3.45	23.31	18.06	3.82
	63	29.62	21.02	2.22	28.24	20.36	2.49	26.78	19.68	2.78	25.22	18.97	3.10	23.55	18.21	3.44	21.70	17.39	3.82
	62	29.07	25.74	2.22	27.72	25.06	2.48	26.29	24.35	2.77	24.80	23.58	3.09	23.20	22.72	3.44	21.54	21.54	3.82
	57	27.79	27.79	2.22	26.72	26.72	2.48	25.58	25.58	2.77	24.36	24.36	3.09	23.03	23.03	3.44	21.54	21.54	3.82
1000	72	35.33	18.30	2.28	33.65	17.66	2.54	31.88	16.99	2.83	30.02	16.29	3.15	27.99	15.53	3.50	25.73	14.71	3.87
	67	32.36	22.91	2.27	30.83	22.26	2.53	29.20	21.57	2.83	27.47	20.85	3.15	25.61	20.07	3.49	23.55	19.23	3.87
	63	30.19	22.19	2.27	28.75	21.52	2.53	27.22	20.83	2.82	25.60	20.11	3.14	23.86	19.33	3.49	21.95	18.48	3.86
	62	29.66	27.43	2.27	28.27	26.72	2.53	26.81	25.94	2.82	25.31	25.03	3.14	23.78	23.78	3.49	22.20	22.20	3.86
	57	28.86	28.86	2.26	27.72	27.72	2.53	26.50	26.50	2.82	25.21	25.21	3.14	23.79	23.79	3.49	22.20	22.20	3.86
1125	72	35.80	19.01	2.32	34.05	18.36	2.59	32.23	17.68	2.88	30.31	16.97	3.20	28.22	16.21	3.54	25.90	15.37	3.92
	67	32.81	24.12	2.32	31.22	23.45	2.58	29.53	22.75	2.87	27.75	22.01	3.19	25.84	21.22	3.54	23.73	20.35	3.91
	63	30.63	23.32	2.31	29.13	22.65	2.58	27.56	21.94	2.87	25.89	21.20	3.19	24.10	20.40	3.53	22.14	19.52	3.91
	62	30.16	28.99	2.31	28.75	28.19	2.57	27.28	27.28	2.87	25.89	25.89	3.19	24.40	24.40	3.53	22.73	22.73	3.91
	57	29.74	29.74	2.31	28.54	28.54	2.57	27.26	27.26	2.87	25.89	25.89	3.19	24.40	24.40	3.54	22.73	22.73	3.91

25HBA3

Cooling Indoor Model	Capacity	Power	Furnace Model
*FY4ANF030	1.00	1.00	
FF1ENP030	0.99	1.00	
FF1ENP036	1.01	1.00	
FV4BNF002	1.01	0.93	
FV4BNF003	1.02	0.92	
FV4BNF005	1.05	0.91	
FX4CN(B,F)036	1.03	0.95	
FX4CNF030	1.01	0.95	
FY4ANF036	1.01	1.02	
CAP**3014A**	1.01	1.01	
CAP**3017A**	1.01	1.01	
CAP**3614A**	1.01	1.01	
CAP**3617A**	1.01	1.01	
CAP**3621A**	1.01	1.01	
CNPF*3618A**	1.01	1.01	
CNPH*3017A**	1.01	1.01	
CNPH*3617A**	1.01	1.01	
CNPV*3014A**	1.01	1.01	
CNPV*3017A**	1.01	1.01	
CNPV*3617A**	1.01	1.01	
CNPV*3621A**	1.01	1.01	
CSPH*3012A**	1.01	1.00	
CSPH*3612A**	1.01	0.99	
CAP**3014A**	1.00	0.94	58CV(A,X)070–12
CAP**3614A**	1.01	0.93	58CV(A,X)070–12
CNPH*3017A**	1.01	0.93	58CV(A,X)070–12
CNPH*3617A**	1.01	0.93	58CV(A,X)070–12
CNPV*3014A**	1.00	0.94	58CV(A,X)070–12
CSPH*3012A**	1.00	0.93	58CV(A,X)070–12
CSPH*3612A**	1.01	0.92	58CV(A,X)070–12
CAP**3017A**	1.01	0.92	58CV(A,X)090–16
CAP**3617A**	1.01	0.92	58CV(A,X)090–16
CNPH*3017A**	1.01	0.92	58CV(A,X)090–16
CNPH*3617A**	1.01	0.92	58CV(A,X)090–16
CNPV*3017A**	1.01	0.92	58CV(A,X)090–16
CNPV*3617A**	1.01	0.92	58CV(A,X)090–16
CSPH*3012A**	1.00	0.92	58CV(A,X)090–16
CSPH*3612A**	1.01	0.91	58CV(A,X)090–16
CAP**3621A**	1.01	0.92	58CV(A,X)110–20
CNPH*3017A**	1.01	0.92	58CV(A,X)110–20
CNPH*3617A**	1.01	0.92	58CV(A,X)110–20
CNPV*3621A**	1.01	0.92	58CV(A,X)110–20
CSPH*3012A**	1.00	0.92	58CV(A,X)110–20
CSPH*3612A**	1.01	0.91	58CV(A,X)110–20

See notes on pg. 24

Cooling Indoor Model	Capacity	Power	Furnace Model
CNPH*3017A**	1.01	0.92	58CV(A,X)135–22
CNPH*3617A**	1.01	0.92	58CV(A,X)135–22
CSPH*3012A**	1.00	0.92	58CV(A,X)135–22
CSPH*3612A**	1.01	0.90	58CV(A,X)135–22
CNPH*3017A**	1.01	0.92	58CV(A,X)155–22
CNPH*3617A**	1.01	0.92	58CV(A,X)155–22
CSPH*3012A**	1.00	0.92	58CV(A,X)155–22
CSPH*3612A**	1.01	0.90	58CV(A,X)155–22
CNPH*3017A**	1.01	0.94	58MVB040–14
CNPH*3617A**	1.01	0.94	58MVB040–14
CSPH*3012A**	1.00	0.94	58MVB040–14
CSPH*3612A**	1.01	0.92	58MVB040–14
CAP**3017A**	1.00	0.93	58MVB060–14
CAP**3617A**	1.01	0.92	58MVB060–14
CNPH*3017A**	1.00	0.94	58MVB060–14
CNPH*3617A**	1.00	0.93	58MVB060–14
CNPV*3017A**	1.00	0.93	58MVB060–14
CNPV*3617A**	1.00	0.93	58MVB060–14
CSPH*3012A**	1.00	0.93	58MVB060–14
CSPH*3612A**	1.01	0.92	58MVB060–14
CAP**3621A**	1.01	0.92	58MVB080–14
CNPH*3017A**	1.01	0.93	58MVB080–14
CNPH*3617A**	1.01	0.93	58MVB080–14
CNPV*3621A**	1.01	0.93	58MVB080–14
CSPH*3012A**	1.00	0.94	58MVB080–14
CSPH*3612A**	1.01	0.92	58MVB080–14
CAP**3621A**	1.01	0.92	58MVB080–20
CNPH*3017A**	1.01	0.93	58MVB080–20
CNPH*3617A**	1.01	0.93	58MVB080–20
CNPV*3621A**	1.01	0.93	58MVB080–20
CSPH*3012A**	1.00	0.93	58MVB080–20
CSPH*3612A**	1.01	0.92	58MVB080–20
CAP**3621A**	1.01	0.92	58MVB100–20
CNPH*3017A**	1.01	0.93	58MVB100–20
CNPH*3617A**	1.01	0.93	58MVB100–20
CNPV*3621A**	1.01	0.92	58MVB100–20
CSPH*3012A**	1.00	0.93	58MVB100–20
CSPH*3612A**	1.01	0.91	58MVB100–20
CNPH*3017A**	1.01	0.92	58MVB120–20
CNPH*3617A**	1.01	0.92	58MVB120–20
CSPH*3012A**	1.00	0.92	58MVB120–20
CSPH*3612A**	1.01	0.91	58MVB120–20

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA336A30 Outdoor Section With FY4ANF042 Indoor Section																			
1050	72	40.73	21.10	2.51	38.83	20.37	2.78	36.79	19.60	3.08	34.66	18.81	3.42	32.34	17.95	3.78	31.18	17.52	3.75
	67	37.22	26.47	2.51	35.44	25.71	2.78	33.56	24.91	3.08	31.57	24.08	3.42	29.44	23.20	3.78	27.10	22.25	4.17
	63	34.65	25.59	2.51	32.97	24.83	2.78	31.20	24.02	3.08	29.33	23.18	3.41	27.32	22.30	3.78	25.14	21.34	4.17
	62	34.00	31.76	2.51	32.37	30.94	2.78	30.68	30.05	3.08	28.95	28.95	3.41	27.33	27.33	3.78	26.26	26.26	3.72
	57	33.18	33.18	2.51	31.86	31.86	2.78	30.45	30.45	3.08	28.95	28.95	3.41	27.33	27.33	3.77	26.26	26.26	3.72
1200	72	41.35	22.07	2.57	39.36	21.33	2.84	37.27	20.55	3.14	35.06	19.74	3.47	32.66	18.88	3.84	30.03	17.94	4.23
	67	37.80	28.11	2.57	35.95	27.34	2.84	34.00	26.53	3.14	31.95	25.68	3.47	29.75	24.79	3.83	27.35	23.80	4.23
	63	35.22	27.14	2.57	33.47	26.36	2.84	31.63	25.53	3.14	29.70	24.68	3.47	27.64	23.77	3.83	25.39	22.78	4.22
	62	34.66	33.91	2.57	33.01	33.01	2.84	31.50	31.50	3.14	29.91	29.91	3.47	28.19	28.19	3.83	26.29	26.29	4.23
	57	34.40	34.40	2.57	32.99	32.99	2.84	31.50	31.50	3.14	29.91	29.91	3.47	28.19	28.19	3.83	26.29	26.29	4.23
1350	72	41.78	22.99	2.62	39.74	22.24	2.90	37.58	21.45	3.20	35.32	20.64	3.53	32.87	19.76	3.89	30.17	18.81	4.28
	67	38.22	29.69	2.62	36.32	28.90	2.90	34.31	28.07	3.20	32.21	27.20	3.53	29.96	26.28	3.89	27.51	25.25	4.28
	63	35.62	28.60	2.62	33.83	27.80	2.90	31.94	26.97	3.20	29.96	26.09	3.53	27.86	25.15	3.89	25.57	24.11	4.28
	62	35.39	35.39	2.62	33.91	33.91	2.90	32.35	32.35	3.20	30.68	30.68	3.53	28.88	28.88	3.89	26.88	26.88	4.28
	57	35.39	35.39	2.62	33.92	33.92	2.90	32.35	32.35	3.20	30.69	30.69	3.53	28.88	28.88	3.89	26.88	26.88	4.28

Cooling Indoor Model	Capacity	Power	Furnace Model
*FY4ANF042	1.00	1.00	
FF1ENP036	0.99	0.98	
FV4BNF002	0.98	0.93	
FV4BNF003	0.99	0.92	
FV4BNF005	1.03	0.91	
FX4CN(B,F)036	1.00	0.95	
FX4CN(B,F)042	1.02	0.94	
FY4ANF036	0.97	0.98	
CAP**3614A**	0.95	0.96	
CAP**3617A**	0.98	0.99	
CAP**3621A**	0.98	0.99	
CAP**4221A**	0.99	0.99	
CAP**4224A**	0.99	0.99	
CNPF*3618A**	0.98	0.99	
CNPH*3617A**	0.98	0.99	
CNPH*4221A**	0.99	0.99	
CNPV*3617A**	0.98	0.99	
CNPV*3621A**	0.98	0.99	
CNPV*4221A**	0.99	0.99	
CSPH*3612A**	0.98	0.97	
CSPH*4212A**	0.99	0.98	
CAP**3614A**	0.95	0.92	58CV(A,X)070–12
CNPH*3617A**	0.98	0.92	58CV(A,X)070–12
CNPH*4221A**	0.99	0.91	58CV(A,X)070–12
CSPH*3612A**	0.98	0.91	58CV(A,X)070–12
CSPH*4212A**	0.99	0.92	58CV(A,X)070–12
CAP**3617A**	0.98	0.91	58CV(A,X)090–16
CNPH*3617A**	0.98	0.93	58CV(A,X)090–16
CNPH*4221A**	0.99	0.90	58CV(A,X)090–16
CNPV*3617A**	0.98	0.98	58CV(A,X)090–16
CSPH*3612A**	0.98	0.91	58CV(A,X)090–16
CSPH*4212A**	0.99	0.92	58CV(A,X)090–16
CAP**3621A**	0.99	0.91	58CV(A,X)110–20
CAP**4221A**	0.99	0.92	58CV(A,X)110–20
CNPH*3617A**	0.98	0.93	58CV(A,X)110–20
CNPH*4221A**	0.99	0.90	58CV(A,X)110–20
CNPV*3621A**	0.99	0.94	58CV(A,X)110–20
CNPV*4221A**	0.99	0.90	58CV(A,X)110–20
CSPH*3612A**	0.98	0.91	58CV(A,X)110–20
CSPH*4212A**	0.99	0.92	58CV(A,X)110–20
CAP**4224A**	0.99	0.92	58CV(A,X)135–22
CNPH*3617A**	0.98	0.93	58CV(A,X)135–22
CNPH*4221A**	0.99	0.90	58CV(A,X)135–22
CSPH*3612A**	0.98	0.91	58CV(A,X)135–22
CSPH*4212A**	0.99	0.90	58CV(A,X)135–22

See notes on pg. 24

Cooling Indoor Model	Capacity	Power	Furnace Model
CAP**4224A**	0.99	0.90	58CV(A,X)155–22
CNPH*3617A**	0.98	0.91	58CV(A,X)155–22
CNPH*4221A**	0.99	0.90	58CV(A,X)155–22
CSPH*3612A**	0.98	0.89	58CV(A,X)155–22
CSPH*4212A**	0.99	0.90	58CV(A,X)155–22
CAP**4224A**	0.99	0.94	58MVB040–14
CNPH*3617A**	0.98	0.93	58MVB040–14
CNPH*4221A**	0.98	0.91	58MVB040–14
CSPH*3612A**	0.98	0.93	58MVB040–14
CSPH*4212A**	0.99	0.91	58MVB040–14
CAP**3617A**	0.98	0.93	58MVB060–14
CNPH*3617A**	0.98	0.92	58MVB060–14
CNPH*4221A**	0.99	0.90	58MVB060–14
CNPV*3617A**	0.98	0.92	58MVB060–14
CSPH*3612A**	0.98	0.91	58MVB060–14
CSPH*4212A**	0.99	0.91	58MVB060–14
CAP**3621A**	0.98	0.92	58MVB080–14
CAP**4221A**	0.98	0.93	58MVB080–14
CNPH*3617A**	0.97	0.94	58MVB080–14
CNPH*4221A**	0.98	0.91	58MVB080–14
CNPV*3621A**	0.98	0.94	58MVB080–14
CNPV*4221A**	0.98	0.91	58MVB080–14
CSPH*3612A**	0.98	0.93	58MVB080–14
CSPH*4212A**	0.99	0.91	58MVB080–14
CAP**3621A**	0.98	0.92	58MVB080–20
CAP**4221A**	0.99	0.91	58MVB080–20
CNPH*3617A**	0.98	0.92	58MVB080–20
CNPH*4221A**	0.99	0.91	58MVB080–20
CNPV*3621A**	0.98	0.92	58MVB080–20
CNPV*4221A**	0.99	0.91	58MVB080–20
CSPH*3612A**	0.98	0.91	58MVB080–20
CSPH*4212A**	0.99	0.91	58MVB080–20
CAP**3621A**	0.98	0.91	58MVB100–20
CAP**4221A**	0.99	0.91	58MVB100–20
CNPH*3617A**	0.98	0.92	58MVB100–20
CNPH*4221A**	0.99	0.91	58MVB100–20
CNPV*3621A**	0.98	0.93	58MVB100–20
CNPV*4221A**	0.99	0.91	58MVB100–20
CSPH*3612A**	0.98	0.91	58MVB100–20
CSPH*4212A**	0.99	0.92	58MVB100–20
CAP**4224A**	0.99	0.91	58MVB120–20
CNPH*3617A**	0.98	0.92	58MVB120–20
CNPH*4221A**	0.99	0.90	58MVB120–20
CSPH*3612A**	0.98	0.91	58MVB120–20
CSPH*4212A**	0.99	0.92	58MVB120–20

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA342A30 Outdoor Section With FY4ANF042 Indoor Section																			
1225	72	48.26	24.63	3.08	46.00	23.75	3.41	43.63	22.84	3.77	41.15	21.90	4.17	38.47	20.90	4.61	35.49	19.80	5.09
	67	44.21	30.69	3.06	42.14	29.80	3.39	39.96	28.86	3.76	37.67	27.90	4.16	35.20	26.87	4.60	32.50	25.76	5.08
	63	41.23	29.75	3.05	39.29	28.85	3.38	37.24	27.91	3.75	35.09	26.94	4.15	32.79	25.91	4.60	30.28	24.80	5.08
	62	40.45	36.69	3.05	38.56	35.75	3.38	36.58	34.74	3.74	34.53	33.66	4.15	32.38	32.38	4.60	30.32	30.32	5.08
	57	39.05	39.05	3.04	37.54	37.54	3.37	35.93	35.93	3.74	34.22	34.22	4.15	32.37	32.37	4.60	30.32	30.32	5.08
1400	72	48.98	25.68	3.16	46.64	24.79	3.48	44.18	23.87	3.84	41.64	22.93	4.25	38.84	21.90	4.68	35.77	20.79	5.16
	67	44.93	32.50	3.14	42.77	31.59	3.47	40.50	30.64	3.83	38.12	29.66	4.23	35.57	28.61	4.68	32.78	27.46	5.16
	63	41.93	31.44	3.13	39.91	30.53	3.45	37.78	29.58	3.82	35.55	28.58	4.23	33.17	27.53	4.67	30.58	26.38	5.16
	62	41.22	39.13	3.12	39.28	38.11	3.45	37.28	36.95	3.82	35.34	35.34	4.22	33.37	33.37	4.67	31.19	31.19	5.16
	57	40.48	40.48	3.12	38.87	38.87	3.45	37.16	37.16	3.82	35.34	35.34	4.22	33.38	33.38	4.67	31.19	31.19	5.16
1575	72	49.51	26.67	3.23	47.10	25.77	3.56	44.56	24.84	3.92	41.96	23.89	4.32	39.08	22.86	4.76	35.93	21.74	5.23
	67	45.43	34.21	3.21	43.21	33.29	3.54	40.87	32.32	3.90	38.43	31.32	4.31	35.82	30.25	4.75	32.96	29.06	5.23
	63	42.44	33.06	3.20	40.35	32.13	3.53	38.16	31.15	3.89	35.87	30.14	4.30	33.43	29.06	4.74	30.78	27.86	5.23
	62	41.88	41.27	3.20	39.96	39.96	3.53	38.15	38.15	3.89	36.24	36.24	4.30	34.17	34.17	4.74	31.87	31.87	5.23
	57	41.65	41.65	3.20	39.96	39.96	3.53	38.15	38.15	3.89	36.24	36.24	4.30	34.18	34.18	4.74	31.87	31.87	5.23

Cooling Indoor Model	Capacity	Power	Furnace Model
FE4ANF005	1.04	0.89	
FV4BNB006	1.05	0.88	
FV4BNF003	0.99	0.89	
FV4BNF005	1.04	0.89	
FX4CN(B,F)042	1.02	0.95	
FX4CN(B,F)048	1.05	0.93	
FY4ANF048	1.02	1.01	
CAP**4221A**	0.99	0.99	
CAP**4224A**	0.99	0.99	
CAP**4817A**	1.00	0.97	
CAP**4821A**	1.01	0.99	
CAP**4824A**	1.01	0.99	
CNPF*4818A**	1.00	0.99	
CNPH*4221A**	1.00	1.00	
CNPH*4821A**	1.01	0.99	
CNPV*4221A**	0.99	0.99	
CNPV*4821A**	1.01	0.99	
CNPV*4824A**	1.01	0.99	
CSPH*4212A**	0.99	0.96	
CSPH*4812A**	1.01	0.98	
CNPH*4221A**	0.99	0.93	58CV(A,X)070–12
CNPH*4821A**	1.00	0.94	58CV(A,X)070–12
CSPH*4212A**	0.98	0.91	58CV(A,X)070–12
CSPH*4812A**	1.01	0.95	58CV(A,X)070–12
CAP**4817A**	0.99	0.90	58CV(A,X)090–16
CNPH*4221A**	0.99	0.90	58CV(A,X)090–16
CNPH*4821A**	1.01	0.92	58CV(A,X)090–16
CSPH*4212A**	0.99	0.90	58CV(A,X)090–16
CSPH*4812A**	1.01	0.92	58CV(A,X)090–16
CAP**4221A**	0.99	0.92	58CV(A,X)110–20
CAP**4821A**	1.01	0.92	58CV(A,X)110–20
CNPH*4221A**	1.00	0.90	58CV(A,X)110–20
CNPH*4821A**	1.01	0.92	58CV(A,X)110–20
CNPV*4221A**	0.99	0.89	58CV(A,X)110–20
CNPV*4821A**	1.01	0.92	58CV(A,X)110–20
CSPH*4212A**	0.99	0.90	58CV(A,X)110–20
CSPH*4812A**	1.01	0.92	58CV(A,X)110–20
CAP**4224A**	0.99	0.90	58CV(A,X)135–22
CAP**4824A**	1.01	0.91	58CV(A,X)135–22
CNPH*4221A**	1.00	0.90	58CV(A,X)135–22
CNPH*4821A**	1.01	0.91	58CV(A,X)135–22
CNPV*4824A**	1.01	0.91	58CV(A,X)135–22
CSPH*4212A**	0.99	0.89	58CV(A,X)135–22
CSPH*4812A**	1.01	0.91	58CV(A,X)135–22
CAP**4224A**	0.99	0.89	58CV(A,X)155–22
CAP**4824A**	1.01	0.91	58CV(A,X)155–22
CNPH*4221A**	1.00	0.90	58CV(A,X)155–22
CNPH*4821A**	1.01	0.90	58CV(A,X)155–22
CNPV*4824A**	1.01	0.91	58CV(A,X)155–22
CSPH*4212A**	0.99	0.89	58CV(A,X)155–22
CSPH*4812A**	1.01	0.91	58CV(A,X)155–22

Cooling Indoor Model	Capacity	Power	Furnace Model
CAP**4224A**	0.98	0.92	58MVB040–14
CAP**4824A**	1.00	0.94	58MVB040–14
CNPH*4221A**	0.99	0.92	58MVB040–14
CNPH*4821A**	1.00	0.93	58MVB040–14
CNPV*4824A**	1.00	0.93	58MVB040–14
CSPH*4212A**	0.98	0.91	58MVB040–14
CSPH*4812A**	1.00	0.93	58MVB040–14
CAP**4817A**	0.99	0.91	58MVB060–14
CNPH*4221A**	0.99	0.91	58MVB060–14
CNPH*4821A**	1.00	0.92	58MVB060–14
CSPH*4212A**	0.99	0.91	58MVB060–14
CSPH*4812A**	1.00	0.92	58MVB060–14
CAP**4221A**	0.98	0.93	58MVB080–14
CAP**4821A**	1.00	0.91	58MVB080–14
CNPH*4221A**	0.99	0.93	58MVB080–14
CNPH*4821A**	1.00	0.94	58MVB080–14
CNPV*4221A**	0.99	0.93	58MVB080–14
CNPV*4821A**	1.00	0.94	58MVB080–14
CSPH*4212A**	0.98	0.91	58MVB080–14
CSPH*4812A**	1.00	0.94	58MVB080–14
CAP**4221A**	0.99	0.93	58MVB080–20
CAP**4821A**	1.00	0.93	58MVB080–20
CNPH*4221A**	0.99	0.92	58MVB080–20
CNPH*4821A**	1.00	0.93	58MVB080–20
CNPV*4221A**	0.98	0.91	58MVB080–20
CNPV*4821A**	1.00	0.93	58MVB080–20
CSPH*4212A**	0.99	0.92	58MVB080–20
CSPH*4812A**	1.00	0.92	58MVB080–20
CAP**4221A**	0.99	0.92	58MVB100–20
CAP**4821A**	1.00	0.92	58MVB100–20
CNPH*4221A**	0.99	0.90	58MVB100–20
CNPH*4821A**	1.00	0.91	58MVB100–20
CNPV*4221A**	0.99	0.90	58MVB100–20
CNPV*4821A**	1.00	0.91	58MVB100–20
CSPH*4212A**	0.99	0.91	58MVB100–20
CSPH*4812A**	1.00	0.92	58MVB100–20
CAP**4224A**	0.99	0.92	58MVB120–20
CAP**4824A**	1.00	0.91	58MVB120–20
CNPH*4221A**	0.99	0.90	58MVB120–20
CNPH*4821A**	1.00	0.91	58MVB120–20
CNPV*4824A**	1.00	0.91	58MVB120–20
CSPH*4212A**	0.99	0.90	58MVB120–20
CSPH*4812A**	1.00	0.91	58MVB120–20

See notes on pg. 24

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA348A30 Outdoor Section With FY4ANF048 Indoor Section																			
1400	72	55.40	28.31	3.28	52.85	27.32	3.64	50.16	26.29	4.04	47.32	25.21	4.48	44.24	24.07	4.96	40.83	22.81	5.48
	67	50.66	35.30	3.27	48.32	34.30	3.63	45.85	33.24	4.03	43.23	32.13	4.47	40.39	30.96	4.95	37.28	29.68	5.48
	63	47.16	34.17	3.27	44.97	33.16	3.63	42.65	32.10	4.03	40.18	30.98	4.47	37.54	29.81	4.95	34.64	28.52	5.47
	62	46.25	42.22	3.27	44.12	41.16	3.63	41.87	40.03	4.03	39.52	38.79	4.47	37.13	37.13	4.95	34.77	34.77	5.47
	57	44.75	44.75	3.27	43.04	43.04	3.63	41.21	41.21	4.03	39.26	39.26	4.47	37.13	37.13	4.95	34.77	34.77	5.47
1600	72	56.26	29.55	3.36	53.63	28.56	3.72	50.81	27.50	4.12	47.87	26.42	4.56	44.68	25.26	5.04	41.16	23.99	5.56
	67	51.50	37.44	3.36	49.07	36.42	3.72	46.50	35.35	4.12	43.77	34.22	4.56	40.83	33.02	5.04	37.62	31.70	5.56
	63	47.98	36.18	3.35	45.70	35.15	3.71	43.28	34.07	4.11	40.73	32.94	4.55	37.99	31.73	5.03	35.00	30.41	5.56
	62	47.16	45.12	3.35	44.97	43.96	3.71	42.69	42.69	4.11	40.59	40.59	4.55	38.33	38.33	5.03	35.82	35.82	5.56
	57	46.44	46.44	3.35	44.61	44.61	3.71	42.67	42.67	4.11	40.59	40.59	4.55	38.34	38.34	5.03	35.83	35.83	5.56
1800	72	56.87	30.73	3.45	54.16	29.72	3.81	51.25	28.65	4.20	48.26	27.57	4.64	44.97	26.39	5.12	41.36	25.11	5.64
	67	52.10	39.48	3.44	49.59	38.45	3.80	46.94	37.35	4.20	44.13	36.19	4.64	41.13	34.96	5.12	37.84	33.60	5.64
	63	48.58	38.09	3.44	46.22	37.05	3.80	43.74	35.94	4.20	41.11	34.78	4.64	38.30	33.54	5.12	35.25	32.17	5.64
	62	47.96	47.60	3.44	45.90	45.90	3.80	43.85	43.85	4.20	41.66	41.66	4.64	39.30	39.30	5.12	36.65	36.65	5.64
	57	47.82	47.82	3.44	45.90	45.90	3.80	43.86	43.86	4.20	41.67	41.67	4.64	39.30	39.30	5.12	36.65	36.65	5.64

Cooling Indoor Model	Capacity	Power	Furnace Model
*FY4ANF048	1.00	1.00	
FB4BNB070	1.02	0.99	
FV4BNB006	1.03	0.89	
FV4BNF005	1.01	0.89	
FX4CN(B,F)048	1.02	0.94	
FX4CN(B,F)060	1.03	0.93	
FY4ANB060	1.02	1.00	
CAP**4817A**	0.97	0.97	
CAP**4821A**	0.99	0.99	
CAP**4824A**	0.99	0.99	
CAP**6021A**	0.99	0.99	
CAP**6024A**	1.01	1.01	
CNPF*4818A**	0.97	0.97	
CNPH*4821A**	0.97	0.97	
CNPH*6024A**	1.01	1.01	
CNPV*4821A**	0.99	0.99	
CNPV*4824A**	0.99	0.99	
CNPV*6024A**	1.01	1.01	
CSPH*4812A**	0.99	0.99	
CSPH*6012A**	1.01	1.01	
CAP**4817A**	0.97	0.91	58CV(A,X)090–16
CNPH*4821A**	0.96	0.90	58CV(A,X)090–16
CNPH*6024A**	1.00	0.92	58CV(A,X)090–16
CSPH*4812A**	0.98	0.92	58CV(A,X)090–16
CSPH*6012A**	1.00	0.92	58CV(A,X)090–16
CAP**4821A**	0.98	0.92	58CV(A,X)110–20
CAP**6021A**	0.98	0.90	58CV(A,X)110–20
CNPH*4821A**	0.96	0.90	58CV(A,X)110–20
CNPH*6024A**	1.00	0.92	58CV(A,X)110–20
CNPV*4821A**	0.98	0.92	58CV(A,X)110–20
CSPH*4812A**	0.98	0.92	58CV(A,X)110–20
CSPH*6012A**	1.01	0.93	58CV(A,X)110–20
CAP**4824A**	0.98	0.90	58CV(A,X)135–22
CAP**6024A**	1.01	0.93	58CV(A,X)135–22
CNPH*4821A**	0.97	0.89	58CV(A,X)135–22
CNPH*6024A**	1.00	0.90	58CV(A,X)135–22
CNPV*4824A**	0.98	0.90	58CV(A,X)135–22
CNPV*6024A**	1.00	0.90	58CV(A,X)135–22
CSPH*4812A**	0.98	0.90	58CV(A,X)135–22
CSPH*6012A**	1.01	0.91	58CV(A,X)135–22
CAP**4824A**	0.99	0.93	58CV(A,X)155–22
CAP**6024A**	1.01	0.91	58CV(A,X)155–22
CNPH*4821A**	0.97	0.89	58CV(A,X)155–22
CNPH*6024A**	1.01	0.91	58CV(A,X)155–22
CNPV*4824A**	0.99	0.93	58CV(A,X)155–22
CNPV*6024A**	1.01	0.91	58CV(A,X)155–22
CSPH*4812A**	0.98	0.90	58CV(A,X)155–22
CSPH*6012A**	1.01	0.91	58CV(A,X)155–22

Cooling Indoor Model	Capacity	Power	Furnace Model
CAP**4821A**	0.98	0.92	58MVB080–20
CAP**6021A**	0.98	0.90	58MVB080–20
CNPH*4821A**	0.96	0.90	58MVB080–20
CNPH*6024A**	1.00	0.94	58MVB080–20
CNPV*4821A**	0.98	0.92	58MVB080–20
CSPH*4812A**	0.98	0.92	58MVB080–20
CSPH*6012A**	1.00	0.92	58MVB080–20
CAP**4821A**	0.98	0.92	58MVB100–20
CAP**6021A**	0.98	0.90	58MVB100–20
CNPH*4821A**	0.96	0.90	58MVB100–20
CNPH*6024A**	1.00	0.92	58MVB100–20
CNPV*4821A**	0.98	0.92	58MVB100–20
CSPH*4812A**	0.98	0.92	58MVB100–20
CSPH*6012A**	1.00	0.92	58MVB100–20
CAP**4824A**	0.98	0.92	58MVB120–20
CAP**6024A**	1.00	0.92	58MVB120–20
CNPH*4821A**	0.96	0.90	58MVB120–20
CNPH*6024A**	1.00	0.92	58MVB120–20
CNPV*4824A**	0.98	0.92	58MVB120–20
CNPV*6024A**	1.00	0.92	58MVB120–20
CSPH*4812A**	0.98	0.92	58MVB120–20
CSPH*6012A**	1.00	0.92	58MVB120–20

See notes on pg. 24

DETAILED COOLING CAPACITIES CONTINUED

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
25HBA360A30 Outdoor Section With FY4ANF060 Indoor Section																			
1750	72	71.08	36.09	4.41	67.69	34.77	4.86	64.09	33.39	5.36	60.33	31.96	5.90	56.30	30.45	6.50	51.84	28.81	7.14
	67	65.19	45.05	4.36	62.05	43.69	4.81	58.73	42.27	5.30	55.30	40.82	5.85	51.61	39.29	6.44	47.57	37.62	7.09
	63	60.79	43.67	4.31	57.85	42.31	4.76	54.78	40.90	5.26	51.57	39.45	5.81	48.15	37.91	6.40	44.41	36.26	7.05
	62	59.61	53.90	4.30	56.75	52.49	4.75	53.77	51.00	5.25	50.69	49.41	5.80	47.50	47.50	6.40	45.90	45.90	6.36
	57	57.48	57.48	4.28	55.20	55.20	4.74	52.79	52.79	5.24	50.24	50.24	5.79	47.49	47.49	6.40	44.42	44.42	7.06
2000	72	72.12	37.62	4.54	68.55	36.26	4.99	64.87	34.89	5.48	60.98	33.44	6.03	56.80	31.91	6.62	52.19	30.25	7.26
	67	66.24	47.72	4.48	62.96	46.34	4.93	59.50	44.89	5.43	55.93	43.42	5.97	52.11	41.85	6.57	47.93	40.14	7.21
	63	61.83	46.19	4.44	58.77	44.80	4.89	55.56	43.36	5.38	52.22	41.88	5.93	48.67	40.31	6.53	44.80	38.60	7.18
	62	60.73	57.58	4.43	57.79	56.05	4.88	54.77	54.33	5.38	51.88	51.88	5.93	48.94	48.94	6.53	47.37	47.37	6.51
	57	59.63	59.63	4.42	57.18	57.18	4.87	54.60	54.60	5.38	51.89	51.89	5.93	48.94	48.94	6.53	45.66	45.66	7.19
2250	72	72.83	39.05	4.66	69.16	37.69	5.11	65.40	36.31	5.61	61.39	34.85	6.15	57.10	33.30	6.74	52.35	31.61	7.37
	67	66.96	50.26	4.61	63.58	48.86	5.06	60.01	47.39	5.55	56.35	45.89	6.09	52.43	44.28	6.69	48.14	42.52	7.33
	63	62.58	48.57	4.56	59.40	47.16	5.01	56.09	45.69	5.51	52.66	44.18	6.05	49.01	42.56	6.65	45.05	40.80	7.30
	62	61.68	60.83	4.56	58.79	58.79	5.01	56.05	56.05	5.51	53.19	53.19	6.06	50.08	50.08	6.66	46.62	46.62	7.31
	57	61.37	61.37	4.55	58.79	58.79	5.01	56.06	56.06	5.51	53.19	53.19	6.06	50.08	50.08	6.66	46.62	46.62	7.31

25HBA3

Cooling Indoor Model	Capacity	Power	Furnace Model
*FY4ANB060	1.00	1.00	
FV4BNB006	1.01	0.95	
FX4CN(B,F)060	1.01	0.91	
CAP**6021A**	0.99	0.99	
CAP**6024A**	1.01	1.01	
CNPH*6024A**	1.00	1.00	
CNPV*6024A**	1.00	1.00	
CSPH*6012A**	1.01	1.01	
CAP**6021A**	0.97	0.94	58CV(A,X)110–20
CNPH*6024A**	0.98	0.95	58CV(A,X)110–20
CSPH*6012A**	0.99	0.96	58CV(A,X)110–20
CAP**6024A**	0.99	0.93	58CV(A,X)135–22
CNPH*6024A**	0.98	0.95	58CV(A,X)135–22
CNPV*6024A**	0.98	0.95	58CV(A,X)135–22
CSPH*6012A**	0.99	0.93	58CV(A,X)135–22
CAP**6024A**	0.99	0.93	58CV(A,X)155–22
CNPH*6024A**	0.99	0.93	58CV(A,X)155–22
CNPV*6024A**	0.99	0.93	58CV(A,X)155–22
CSPH*6012A**	0.99	0.93	58CV(A,X)155–22

NOTE: When the required data falls between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per ARI standard 210/240–94. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80°F (27°C) entering air at the indoor coil. For sensible capacities at other than 80°F (27°C), deduct 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80°F (27°C), or add 835 Btuh (245 kW) per 1000 CFM (480 L/S) of indoor coil air per degree above 80°F (27°C).

** System kw is total of indoor and outdoor unit kilowatts.

†† At TVA rating indoor condition (75°F edb/63°F ewb). All other indoor air temperatures are at 80°F edb.

EWB — Entering Wet Bulb

FF1E
Base Series Fan Coil
Sizes 018 thru 036

Carrier®
Turn to the Experts℠

Product Data

FEATURES

The FF1E Series Fan Coil unit is primarily designed for apartment applications as upflow indoor air handlers for split-system heat pumps and air conditioners for use with either Puron® or R-22 refrigerant. They are available with factory- or field-installed electric heaters, both of which include the disconnect. A field-installed cooling control with disconnect is also available. A TDR (Time Delay Relay) is included with either the electric heat or the cooling control packages. Both models are available with a factory-installed TXV, Puron or R-22 refrigerant.

This fan coil may be installed free-standing, wall hung or flush mounted in the wall. The 22-in. wide cabinet size in all models allows units to fit between standard stud spacings. No return-air ductwork is required if the application provides for return air in the front of the cabinet through either a louvered closet door or an optional accessory decorative grille panel.

The cabinet exterior is made of pre-painted galvanized sheet metal. The cabinet is fully insulated to meet applications in conditioned space. Additional insulation is required if the unit is installed in an unconditioned space. The unit is supplied with a replaceable filter.

Multispeed, direct-drive, PSC blower motors have been selected to provide the proper air handling for both heating and cooling. Motors are suspended at three points on rubber grommets for quieter operation.

All refrigerant lines, electrical power, and thermostat wiring enter from the top of the cabinet. Sweat-type refrigerant connections on both liquid and suction lines make for swift, low-cost installation. All service access to the unit is conveniently located in the front.

All units come with a factory-supplied hard-shutoff thermostatic expansion valve (TXV) metering device for performance improvement.

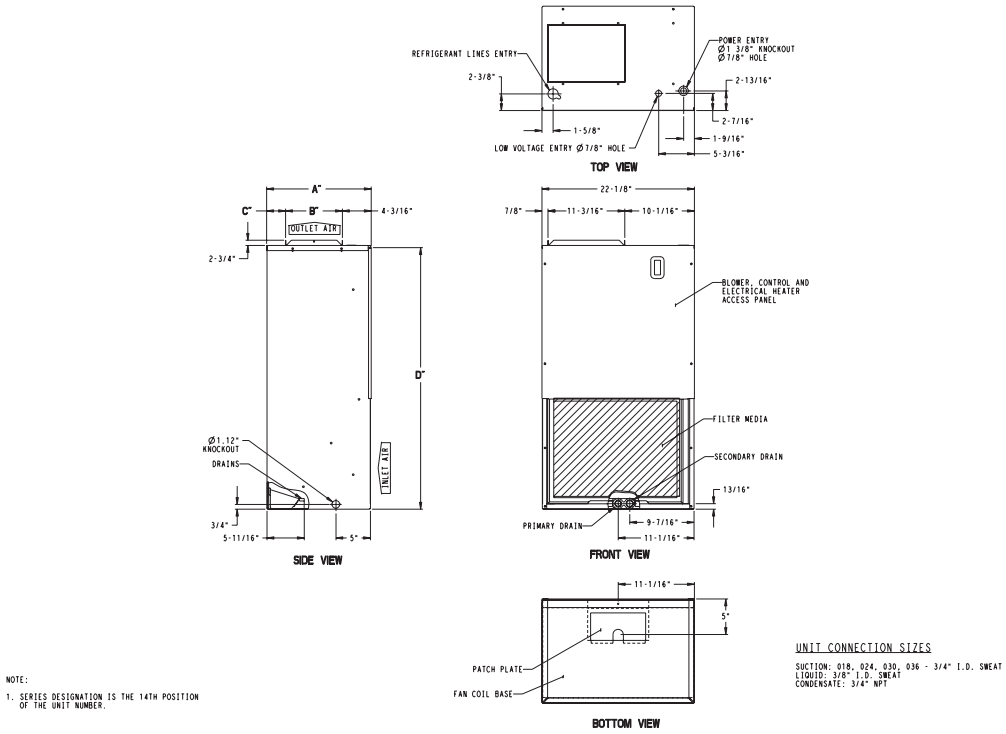
The drain pan is constructed of high-impact, sound-deadening, corrosion-proof polyester resin. Primary and secondary drain connections exit from the bottom or either side of the cabinet.

NOMENCLATURE CHART
CARRIER FAN COILS

1	2	3	4	5	6	7, 8, 9	10, 11, 12	13 14 15 16
F	**F**	**1**	**E**	**N**	**P**	**030**	**000**	**A A A A**
Product Series	Type	Position	Major Series	Electrical	Cabinet/Insulation	Nominal Capacity (Btu)	Heating Size (kW)	Variations
F = Fan Coil	F = Apartment	1=Upflow	E	N = 208/230v-1ph-60hz	P = Puron TXV E = R-22 TXV	018 = 18,000 024 = 24,000 030 = 30,000 036 = 36,000	000 - no heat 005 - 5 kW 075 - 7.5 kW 011 - 11 kW	

Certification applies only when the complete system is listed with ARI.

ISO 9001:2000



A05415

DIMENSIONS

UNIT	SERIES	A (IN.)	B (IN.)	C (IN.)	D (IN.)
FF1EN(P,E)018	A	15–3/16	8–1/4	2–3/4	38–1/16
FF1EN(P,E)024	A	15–3/16	8–1/4	2–3/4	38–1/16
FF1EN(P,E)030	A	15–3/16	8–1/4	2–3/4	38–1/16
FF1EN(P,E)036	A	18–3/8	9–1/4	5	43–3/16

PHYSICAL DATA

ODS CATALOG ORDERING NO.	FACTORY–INSTALLED HEAT (kW)	FACTORY SUPPLIED DISCONNECTS	NOMINAL COOLING CAPACITY (BTUH)	HEIGHT (IN.)	WIDTH (IN.)	DEPTH (IN.)	SHIPPING WEIGHT (LB.)
FF1EN(P,E)018000	Bare Box	N/A	18,000	38–1/16	22–1/8	15–3/16	85
FF1EN(P,E)018005	5	STD					90
FF1EN(P,E)018075	7.5	STD					90
FF1EN(P,E)018011	11	STD					90
FF1EN(P,E)024000	Bare Box	N/A	24,000	38–1/16	22–1/8	15–3/16	87
FF1EN(P,E)024005	5	STD					92
FF1EN(P,E)024075	7.5	STD					92
FF1EN(P,E)024011	11	STD					92
FF1EN(P,E)030000	Bare Box	N/A	30,000	38–1/16	22–1/8	15–3/16	90
FF1EN(P,E)030005	5	STD					95
FF1EN(P,E)030075	7.5	STD					95
FF1EN(P,E)030011	11	STD					95
FF1EN(P,E)036000	Bare Box	N/A	36,000	43–3/16	22–1/8	18–3/8	105
FF1EN(P,E)036005	5	STD					110
FF1EN(P,E)036075	7.5	STD					110
FF1EN(P,E)036011	11	STD					110

SPECIFICATIONS

MODEL FF1E	018	024	030	036
REFRIGERANT METERING DEVICE	TXV – factory–installed hard–shutoff, bi–flow type for heat pump application			
TXV SIZE	3 ton for R–22			
	2 ton for Puron (R–410A)			3 ton for Puron (R–410A)
Rows/Fins Per In.	3 / 14.5			
Height x Width (In.)	18 x 17.8	22 x 17.8		28 x 17.8
Face Area (Sq Ft)	2.23	2.72		3.46
Configuration	Slope			
BLOWER & MOTOR				
Air Discharge	Upflow			
Blower Type	Direct Drive			
Wheel Size (In.)	10 X 6			10 X 7
CFM (Nominal)	600	800	1000	1200
Motor Type	PSC	PSC	PSC	PSC
Motor Hp	1/5	1/5	1/3	1/3
Motor Speeds	2			
FILTER Cleanable (In.)	16 X 20 X 1			20 X 20 X 1
CONNECTIONS (Sweat)				
Suction	3/4			
Liquid	3/8			
Condensate (FPT)	3/4			

PERFORMANCE DATA

AIRFLOW PERFORMANCE (CFM)

Model & Size	Blower Speed	0.10	0.20	0.30	0.40	0.50	0.60
018	High	995	955	910	862	811	–
	Low	738	711	678	641	600	–
024	High	950	908	861	810	754	693
	Low	732	699	662	621	576	527
030	High	1128	1082	1030	973	911	845
	Low	1053	1011	964	911	854	791
036	High	1408	1355	1295	1227	1152	1068
	Low	1191	1157	1113	1061	1000	931

NOTE:

1. Airflow based upon dry coil at 230v with factory approved filter and electric heater (2 element heater sizes 18 through 36).
2. Not recommended for use above 0.60 in. external static pressure.
3. Shading – Airflow outside 450 cfm/ton.

FY4A, ~~FA4C~~
Base Series Fan Coil
Sizes 1 1/2 — 5 Ton (018 Thru 060)

Carrier®
Turn to the Experts℠

Product Data

AIR HANDLER TECHNOLOGY AT ITS FINEST

The FY4A and FA4C direct-expansion fan coils are designed to cover a wide range of air handling requirements. They are compact and ready to fit where needed, in the basement, crawlspace, attic, utility room, or closet. The unique cabinet design of these fan coils meet new stringent regulations for cabinet air leakage, a requirement of 2% cabinet leakage rate when tested at 1.0 inches of static pressure.

The FY4A and FA4C units are shipped with a factory-installed hard-shutoff thermostatic expansion valve (TXV) metering device with an internal check valve for reverse flow bi-pass capability. All units come with solid state fan controls, 1-in. thick insulation with R-value of 4.2, super-quiet multispeed motors, and fully-wettable coils. Units can accommodate factory- or field-installed heaters from 3 to 30 kW.

The FY4A design is a residential new construction (RNC) model available for use with Puron®, the environmentally sound refrigerant. It comes with or without factory-installed disconnects. It has a pre-painted (gray) galvanized insulated steel casing, 2-speed PSC motor in the 018 through 036 sizes, and 3-speed PSC motors in the 042 through 060 sizes.

The FA4C has all the same quality features as the FY4A, but is for use with R-22 refrigerant.

STANDARD FEATURES

- Grooved copper tubing
- Lanced sine-wave aluminum fin
- Fully-wettable coil
- High-impact thermoplastic condensate pan
- Primary and secondary drain connections with brass inserts
- Multipoise design for maximum versatility
- Unique cabinet design that meets new stringent regulations for air leakage. Meets requirements of a 2% cabinet leakage rate when tested at 1.0 inches of static pressure.
- Field-installed heater packages from 3-30 kW (fused, circuit breaker, or non-fused)
- Control board with built-in, replaceable 5-amp blade-type auto fuse
- 2-speed motor in 018 through 036 sizes
- 3-speed motor in 042 through 060 sizes
- Cooling controls
- Time-delay relay (TDR)
- Pre-painted galvanized steel cabinet (gray)
- High-density, super thick R-4.2 insulation
- Newly-improved filter rack area - filter door insulation added for an improved air seal
- Sweat connections
- Inspection plate for cleaning A-coil design
- HUD approved for manufactured housing
- 40-VA, 208/230v transformer
- All models listed with UL (U.S. and Canada) and ARI

ADDITIONAL FEATURES

FY4A

- Puron® refrigerant factory-installed thermostatic expansion valves (TXV)
- Factory-installed heaters available

FA4C

- R-22 refrigerant factory-installed thermostatic expansion valves (TXV)
- 018-060 sizes available with or without factory-installed disconnect
- Factory-installed heaters available

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7–9	10–12
F	**A**	**4**	**C**	**N**	**F**	**018**	**000**
Product	Type	Position	Series	Electrical	Cabinet/ Insulation	Capacity	Heating Size
F – Fan Coil	A – Base, R–22 Y – Base, Puron® Refrigerant	4 – Multipoise	C	N – 208/230v, 1ph–60hz	B – Modular C – Factory Disconnects F – Single piece	018 – 18,000 024 – 24,000 030 – 30,000 036 – 36,000 042 – 42,000 048 – 48,000 060 – 60,000	000 – No Heat 005 – 5kW 008 – 8kW 010 – 10kW 015 – 15kW

Puron™ the environmentally sound refrigerant

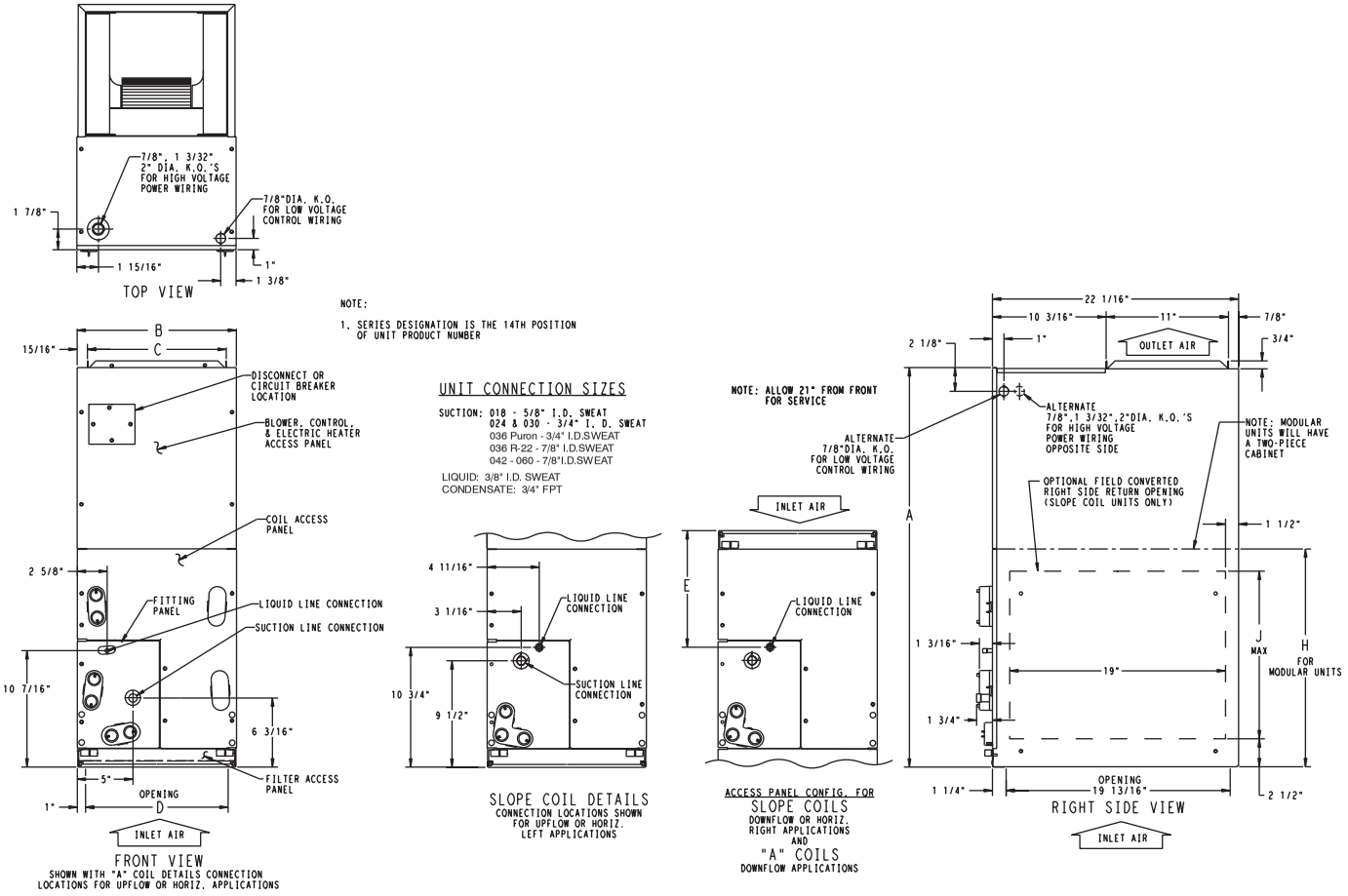
ARI PERFORMANCE CERTIFIED™ ARI Standard 210/240 Unitary Air Conditioners

ARI PERFORMANCE CERTIFIED™ ARI Standard 210/240 Unitary Heat Pumps

c UL® us

ISO 9001:2000 QMI REGISTERED

CERTIFICATION APPLIES ONLY WHEN THE COMPLETE SYSTEM IS LISTED WITH ARI



A05355

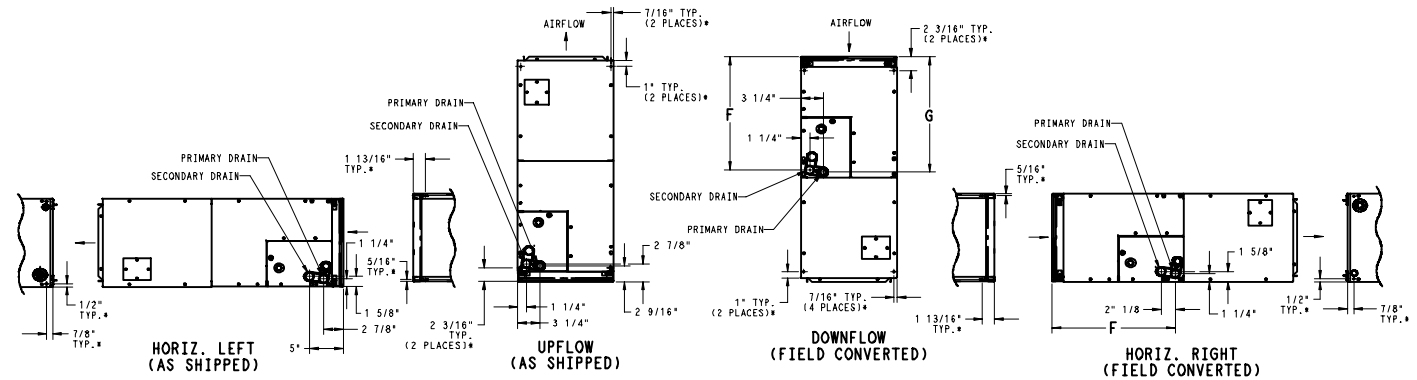
DIMENSIONS

UNIT SIZE FY, FA	COIL TYPE	A		B		C		D		E		H†		J	
		In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm
018	Slope	42–11/16	1084.3	14–5/16	363.5	12–7/16	316.0	12–5/16	312.7	10–7/16	265.1	—	—	12.0	304.8
024, 030	Slope	47–11/16	1211.5	17–5/8	447.5	15–3/4	400.1	15–5/8	396.9	15–3/8	390.5	—	—	17.0	431.8
036	Slope	53–7/16	1357.3	21–1/8	536.5	19–1/4	489.0	19–1/8	485.8	19–3/16	487.0	—	—	19.0	482.6
042	A	49–5/8	1260.5	21–1/8	536.5	19–1/4	489.0	19–1/8	485.8	15–3/8	390.5	—	—	—	—
048	A	53–7/16	1357.3	21–1/8	536.5	19–1/4	489.0	19–1/8	485.8	19–1/2	495.3	—	—	—	—
060	A	59–3/16	1503.4	24–11/16	627.0	22–3/4	577.9	22–11/16	576.2	25–1/4	641.5	34–1/16	685.2	—	—

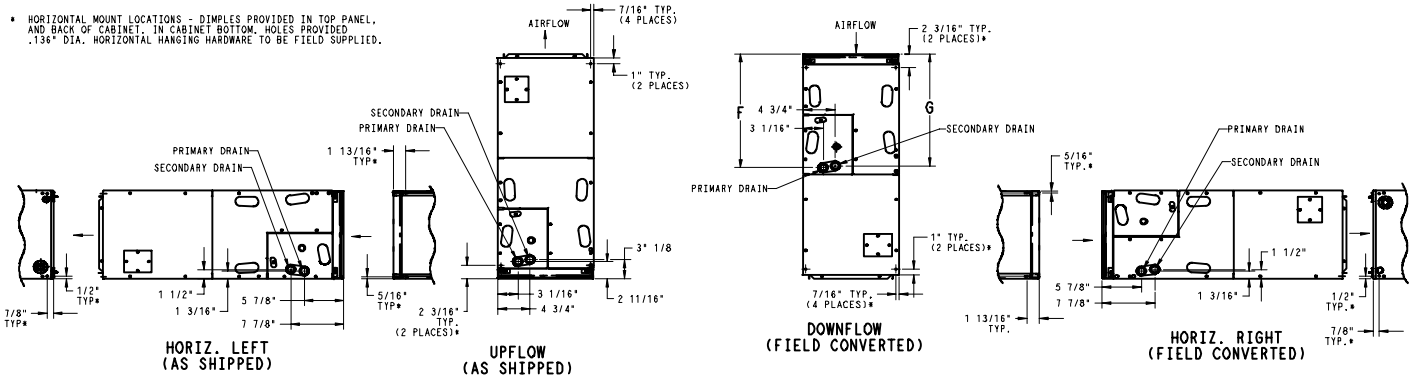
† Applicable to modular units only.

SLOPE COIL

NOTES:
1. CONDENSATE PAN DRAIN CAPS NOT SHOWN FOR CLARITY.



* HORIZONTAL MOUNT LOCATIONS - DIMPLES PROVIDED IN TOP PANEL, AND BACK OF CABINET. IN CABINET BOTTOM, HOLES PROVIDED .136" DIA. HORIZONTAL HANGING HARDWARE TO BE FIELD SUPPLIED.



A-COIL

A05356

DIMENSIONS (CONT)

UNIT SIZE FY, FA	COIL TYPE	F		G	
		In.	mm	In.	mm
018	Slope	18–1/8	460.4	18–5/8	473.1
024, 030	Slope	23–1/8	587.4	23–5/8	600.0
036	Slope	26–15/16	684.2	27–1/2	698.5
042	A	23–7/16	593.3	23–1/8	587.4
048	A	27–1/4	692.2	26–15/16	684.2
060	A	32–15/16	836.6	32–5/8	828.7

PHYSICAL DATA

ODS CATALOG ORDERING NO.	FACTORY INSTALLED HEAT (kW)	NOMINAL COOLING CAPACITY (BTUH)	DIMENSIONS			SHIPPING WEIGHT (LB.)
			Height (In.)	Width (In.)	Depth (In.)	
FY4ANF018000	–	18,000	42–11/16	14–5/16	22–1/16	100
FY4ANF018005	5					
FY4ANF018008	8					
FY4ANF024000	–	24,000	47–11/16	17–5/8	22–1/16	117
FY4ANF024005	5					
FY4ANF024010	10					
FY4ANF030000	–	30,000	47–11/16	17–5/8	22–1/16	120
FY4ANF030008	8					
FY4ANF030010	10					
FY4ANF036000	–	36,000	53–7/16	21–1/8	22–1/16	144
FY4ANF036010	10					
FY4ANF036015	15					
FY4ANF042000	–	42,000	49–5/8	21–1/8	22–1/16	150
FY4ANF042010	10					
FY4ANF042015	15					
FY4ANF048000	–	48,000	53–7/16	21–1/8	22–1/16	170
FY4ANF048010	10					
FY4ANF048015	15					
FY4ANB060000	–	60,000	59–3/16	24–11/16	22–1/16	198
FY4ANB060010	10					
FY4ANB060015	15					

ODS CATALOG ORDERING NO.	FACTORY INSTALLED HEAT (kW)	NOMINAL COOLING CAPACITY (BTUH)	DIMENSIONS			SHIPPING WEIGHT (LB.)
			Height (In.)	Width (In.)	Depth (In.)	
FA4CNF018000	–	18,000	42–11/16	14–5/16	22–1/16	100
FA4CNF018005	5					
FA4CNC018005						
FA4CNF018008	8					
FA4CNF024000	–	24,000	47–11/16	17–5/8	22–1/16	117
FA4CNF024005	5					
FA4CNC024005						
FA4CNF024010	10					
FA4CNF030000	–	30,000	47–11/16	17–5/8	22–1/16	120
FA4CNF030008	8					
FA4CNC030008						
FA4CNF030010	10					
FA4CNF036000	–	36,000	53–7/16	21–1/8	22–1/16	144
FA4CNF036010	10					
FA4CNC036010						
FA4CNF036015	15					
FA4CNF042000	–	42,000	49–5/8	21–1/8	22–1/16	150
FA4CNF042010	10					
FA4CNC042010						
FA4CNF042015	15					
FA4CNF048000	–	48,000	53–7/16	21–1/8	22–1/16	170
FA4CNF048010	10					
FA4CNC048010						
FA4CNF048015	15					
FA4CNB060000	–	60,000	59–3/16	24–11/16	22–1/16	198
FA4CNB060010	10					
FA4CNC060010						
FA4CNB060015	15					

6th digit: B – Modular cabinet, C – Disconnect, F – Single piece cabinet

SPECIFICATIONS

MODEL FY4A	018	024	030	036	042	048	060
COIL							
Puron® Refrigerant Metering Device	TXV – factory installed hard–shutoff, bi–flow type for heat pump application						
TXV Size	2 ton			3 ton		4 ton	
Rows/Fins Per In.	3 / 14.5						
Face Area (Sq. Ft.)	2.23	2.97		3.46	4.45	5.93	7.42
Configuration	Slope				A		
FAN							
CFM (Nominal)	600	800	1000	1200	1400	1600	2000
Motor Type	PSC	PSC	PSC	PSC	PSC	PSC	PSC
Motor Hp	1/6	1/4	1/4	1/3	1/2	3/4	3/4
FILTER* (In.)							
21 – 1/2 x	13	16–3/8		19–7/8			23–5/16
CABINET CONFIGURATION OPTIONS							
	1–piece	1–piece	1–piece	1–piece	1–piece	1–piece	Modular

*Filter must be field–supplied for FY4A units.

MODEL FA4C	018	024	030	036	042	048	060
R–22 Refrigerant Metering Device	TXV – factory installed hard–shutoff, bi–flow type for heat pump application						
TXV SIZE	3 ton				5 ton		6 ton
COIL							
Rows/Fins Per In.	3 / 14.5						
Face Area (Sq. Ft.)	2.23	2.97		3.46	4.45	5.93	7.42
Configuration	Slope				A		
FAN							
CFM (Nominal)	600	800	1000	1200	1400	1600	2000
Motor Type	PSC	PSC	PSC	PSC	PSC	PSC	PSC
Motor Hp	1/6	1/4	1/4	1/3	1/2	3/4	3/4
FILTER* (In.)							
21 – 1/2 x	13	16–3/8		19–7/8			23–5/16
CABINET CONFIGURATION OPTIONS							
	1–piece	1–piece	1–piece	1–piece	1–piece	1–piece	Modular

*Filter must be field–supplied for FA4C units.

PERFORMANCE DATA

AIRFLOW PERFORMANCE (CFM)

MODEL & SIZE	BLOWER SPEED	TOTAL EXTERNAL STATIC PRESSURE					
		0.10	0.20	0.30	0.40	0.50	0.60
FY4A, ~~FA4C~~ 018	High	816	795	753	690	607	504
	Low	633	620	588	538	468	380
FY4A, ~~FA4C~~ 024	High	1055	991	926	860	793	724
	Low	934	878	818	754	686	614
FY4A, ~~FA4C~~ 030	High	1070	1032	978	908	822	721
	Low	910	888	849	791	715	621
FY4A, ~~FA4C~~ 036	High	1352	1316	1273	1223	1167	1103
	Low	1137	1112	1081	1043	998	946
FY4A, ~~FA4C~~ 042	High	1720	1668	1602	1521	1426	1316
	Medium	1576	1540	1488	1421	1338	1239
	Low	1388	1367	1330	1278	1209	1124
FY4A, ~~FA4C~~ 048	High	1902	1824	1743	1659	1571	1479
	Medium	1830	1763	1690	1611	1527	1436
	Low	1625	1584	1531	1465	1387	1296
FY4A, ~~FA4C~~ 060	High	2128	2050	1965	1875	1778	1674
	Medium	1959	1898	1829	1750	1663	1566
	Low	1748	1709	1659	1598	1525	1442

– Shading – Airflow outside 450 cfm/ton.

NOTES:

1. Airflow based upon dry coil at 230v with factory–approved filter and electric heater (2 element heater sizes 18 thru 36, 3 element heater sizes 42 thru 60). Airflow at 208 volts is approximately 10% lower.
2. To avoid potential for condensate blowing out of drain pan prior to making drain trap:
   Return static pressure must be less than 0.40 in. wc.
   Horizontal applications of 042 – 060 sizes must have supply static greater than 0.20 in. wc.
3. Airflow above 400 cfm/ton on 048–060 size could result in condensate blowing off coil or splashing out of drain pan.

PERFORMANCE DATA (cont)

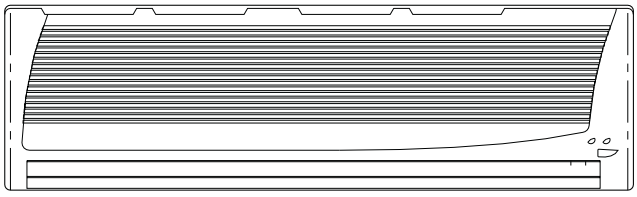
GROSS COOLING CAPACITIES (mbh) - PURON® REFRIGERANT

UNIT SIZE	INDOOR COIL AIR		SATURATED TEMPERATURE LEAVING EVAPORATOR (°F)														
			35			40			45			50			55		
	CFM	EWB	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF
FY4A 018	525	72	40	20	0.00	36	18	0.00	32	16	0.00	27	14	0.02	21	11	0.02
		67	33	20	0.02	29	18	0.02	24	16	0.03	20	14	0.03	14	12	0.03
		62	26	21	0.03	22	18	0.03	18	16	0.03	14	14	0.08	12	12	0.22
	600	72	44	22	0.00	40	20	0.00	35	17	0.01	30	15	0.02	24	13	0.03
		67	36	22	0.03	32	20	0.03	27	18	0.03	22	15	0.04	16	13	0.04
		62	29	23	0.04	25	21	0.04	20	18	0.04	16	16	0.10	13	13	0.24
	675	72	48	24	0.00	43	22	0.00	38	19	0.02	32	17	0.03	26	14	0.04
		67	40	25	0.04	35	22	0.04	29	20	0.04	24	17	0.04	17	14	0.05
		62	32	25	0.05	27	23	0.05	22	20	0.05	17	17	0.11	15	15	0.26
FY4A 024	700	72	51	25	0.00	46	23	0.00	40	20	0.02	34	17	0.03	27	15	0.03
		67	42	26	0.04	37	23	0.04	31	20	0.04	25	18	0.04	18	15	0.04
		62	34	26	0.04	28	24	0.04	23	21	0.05	18	18	0.10	15	15	0.25
	800	72	56	28	0.00	51	25	0.00	44	22	0.03	37	19	0.04	30	16	0.05
		67	46	29	0.05	40	26	0.05	34	23	0.05	27	20	0.05	20	17	0.06
		62	37	29	0.06	31	26	0.06	25	23	0.06	20	20	0.13	17	17	0.27
	900	72	61	30	0.00	55	27	0.01	48	24	0.04	40	21	0.05	32	18	0.06
		67	50	31	0.06	44	28	0.06	37	25	0.06	29	21	0.06	21	18	0.07
		62	40	32	0.07	34	29	0.07	27	25	0.07	22	22	0.15	18	18	0.29
FY4A 030	875	72	61	30	0.01	55	27	0.00	48	24	0.02	41	21	0.03	33	18	0.03
		67	50	31	0.04	44	28	0.04	37	25	0.04	30	21	0.04	22	18	0.05
		62	41	32	0.04	34	29	0.04	28	25	0.05	22	22	0.11	18	18	0.25
	1000	72	68	33	0.00	61	30	0.00	53	27	0.03	45	23	0.04	36	19	0.05
		67	56	34	0.05	49	31	0.05	41	27	0.05	33	24	0.05	24	20	0.06
		62	45	35	0.06	38	32	0.06	30	28	0.06	24	24	0.13	20	20	0.27
	1125	72	73	36	0.00	66	33	0.02	58	29	0.04	48	25	0.05	39	21	0.06
		67	60	38	0.06	53	34	0.06	45	30	0.06	36	26	0.06	26	22	0.07
		62	49	39	0.07	41	35	0.07	33	31	0.08	27	27	0.16	23	23	0.29
FY4A 036	1050	72	79	39	0.00	71	35	0.00	62	31	0.02	52	27	0.03	42	23	0.04
		67	65	40	0.04	57	36	0.04	48	32	0.04	38	28	0.04	28	23	0.05
		62	52	41	0.05	44	37	0.05	36	33	0.05	28	28	0.11	24	24	0.26
	1200	72	87	43	0.00	78	39	0.00	68	34	0.03	57	30	0.04	46	25	0.05
		67	72	44	0.05	63	40	0.05	53	35	0.06	42	31	0.06	31	26	0.06
		62	58	46	0.06	49	41	0.06	39	36	0.07	31	31	0.14	26	26	0.28
	1350	72	95	47	0.00	85	42	0.02	74	37	0.05	62	32	0.06	50	28	0.06
		67	78	49	0.06	68	44	0.06	57	39	0.07	46	34	0.07	33	29	0.07
		62	63	50	0.07	53	45	0.07	43	40	0.08	35	35	0.16	29	29	0.30
FY4A 042	1225	72	93	46	0.00	83	41	0.00	73	37	0.01	62	32	0.03	49	27	0.03
		67	76	47	0.03	67	42	0.03	57	37	0.04	45	32	0.04	33	27	0.04
		62	61	48	0.04	52	43	0.04	42	38	0.04	33	33	0.10	28	28	0.24
	1400	72	102	51	0.00	92	46	0.00	80	40	0.02	68	35	0.04	54	30	0.04
		67	84	52	0.04	74	47	0.04	62	42	0.05	50	36	0.05	36	31	0.05
		62	68	53	0.05	57	48	0.05	46	43	0.06	37	37	0.12	31	31	0.26
	1575	72	111	55	0.00	100	50	0.01	87	44	0.04	74	38	0.05	59	32	0.05
		67	92	57	0.05	80	51	0.06	68	46	0.06	54	40	0.06	39	34	0.06
		62	74	59	0.06	62	53	0.06	50	47	0.07	41	41	0.14	34	34	0.28
FY4A 048	1400	72	109	54	0.00	98	49	0.00	86	43	0.00	73	37	0.02	58	31	0.02
		67	90	55	0.02	79	49	0.02	67	44	0.03	53	38	0.03	39	32	0.03
		62	72	56	0.03	61	50	0.03	49	44	0.03	38	38	0.08	32	32	0.22
	1600	72	121	60	0.00	109	54	0.00	95	48	0.01	81	41	0.02	65	35	0.03
		67	100	61	0.03	87	55	0.03	74	49	0.03	59	42	0.04	43	36	0.04
		62	80	63	0.04	68	56	0.04	55	50	0.04	43	43	0.10	36	36	0.24
	1800	72	132	65	0.00	119	59	0.00	104	52	0.02	88	45	0.03	70	38	0.04
		67	109	67	0.04	95	61	0.04	81	54	0.04	64	47	0.04	47	39	0.05
		62	88	69	0.05	74	62	0.05	60	55	0.05	48	48	0.11	40	40	0.26
FY4A 060	1600	72	132	65	0.00	119	59	0.00	104	52	0.00	89	45	0.01	71	38	0.02
		67	108	67	0.02	95	60	0.02	81	53	0.02	65	46	0.02	48	39	0.02
		62	87	68	0.02	74	61	0.02	60	54	0.03	47	47	0.06	39	39	0.21
	1750	72	141	70	0.00	127	63	0.00	112	56	0.00	95	48	0.02	76	41	0.02
		67	116	72	0.02	102	64	0.02	87	57	0.03	70	49	0.03	51	42	0.03
		62	94	73	0.03	80	66	0.03	64	58	0.03	50	50	0.08	42	42	0.22
	2000	72	156	77	0.01	141	70	0.00	124	62	0.01	105	54	0.02	84	46	0.03
		67	129	80	0.03	113	72	0.03	96	64	0.03	77	55	0.04	57	47	0.04
		62	104	82	0.04	88	73	0.04	71	65	0.04	57	57	0.10	48	48	0.24

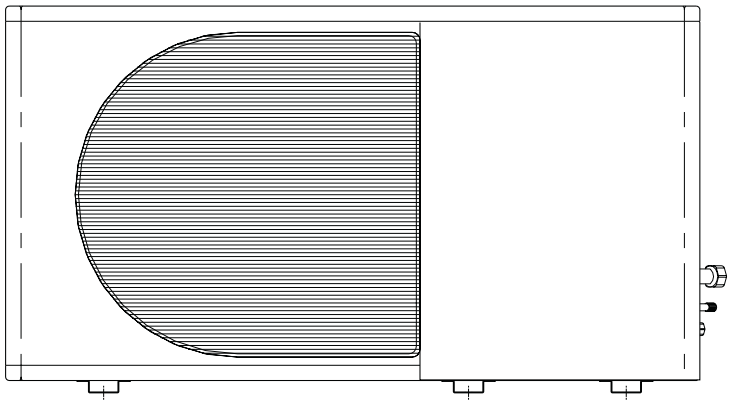
Product Data

38/40BN Series Duct-Free Split Systems Cooling Only and Heat Pumps for High-Wall Applications

1 1/2 to 3 Nominal Tons



INDOOR UNIT



OUTDOOR UNIT

The Ideal Complement to Your Ducted System When It Is Impractical or Prohibitively Expensive to Use Ductwork

Features/Benefits

An inexpensive and creative solution to design problems

The 38/40BN series duct-free split systems are a matched combination of an outdoor condensing unit and an indoor fan coil units connected only by refrigerant tubing and wires.

The fan coil is mounted on the wall, near the ceiling. This selection of fan coils permits inexpensive and creative solutions to design problems such as:

- add-ons to current space (an office or family room addition)
- special space requirements (a computer room)
- when changes in the load cannot be handled by the existing system
- when adding air conditioning to spaces that are heated by hydronic or electric heat and have no ductwork
- historical renovations or any application where preserving the look of the original structure is essential

These compact indoor fan coil units take up very little space in the room and do not obstruct windows. The fan coils are attractively styled to blend with most room decors. Advanced system components incorporate innovative technology to provide reliable cooling performance at low sound levels.

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The 38/40BN duct-free split systems offer the solution of choice. The compressor is outdoors, linked by refrigerant lines to an indoor fan coil located directly in the room it will heat or cool. These systems have minimal impact on the existing structure, and the design and interior of the conditioned space is not compromised by bulky ductwork. Because of these features, this duct-free split system can be installed in places where conventional ducted cooling simply cannot go.

Low sound levels

When noise is a concern, the duct-free split systems are the answer because you do not have to worry about duct design. There are no compressors indoors, either in the conditioned space or directly over it, and there is none of the noise usually generated by air being forced through ductwork. The indoor units are whisper quiet. The outdoor units operate at low sound levels, and are the perfect answer to sound level ordinances.

When sound ordinances and proximity to neighbors demand quiet operation, the 38BN unit is the right choice: The advanced, horizontal airflow design distributes air more evenly over the coil. The coil also acts as an extra sound-suppressing device before the air is discharged at a very low velocity.

Secure operation

If security is an issue, outdoor and indoor units are connected only by refrigerant piping and wiring to prevent intruders from crawling through ductwork. In addition, since 38BN units can be installed 6 in. away from outside walls, coils are protected from vandals and severe weather.

Fast installation

This compact duct-free split system takes only a few hours to install, since only wire and piping need to be run. The fast and easy installation ensures minimal disruption to customers in the home or workplace. This is an added advantage of the 38/40BN duct-free split systems, especially in retrofit situations.

Features like mounting brackets make the unit very easy to install.

Simple servicing and maintenance

Removing a panel on outdoor units provides immediate access to the isolated compressor and control compartment, allowing a service technician access to check unit operation without a loss of condenser airflow. In addition, the draw-thru design of the outdoor section means that dirt accumulates on the outside surface of the coil. Coils can be cleaned quickly from the inside using a pressure hose and detergent.

On all indoor units, service and maintenance expense is reduced due to easy-to-change cleanable filters. In addition, these high wall systems have extensive self-diagnostics to assist in troubleshooting.

Built-in reliability

Duct-free split system indoor and outdoor units are designed to provide years of trouble-free operation.

The high wall indoor units include protection against freeze-up and high discharge temperatures. All systems include self-diagnostics to ensure reliability.

The condensing units have many safety features standard to ensure high performance and lasting reliability under the most demanding situations. For example, start capacitors and relays assure dependable start-ups, especially during low voltage conditions down to 187 v.

The totally enclosed condenser-fan motor means greater reliability under rain conditions, ensuring dependable performance for many years.

Individual room comfort

Maximum comfort is provided because each space can have individual set points and may be controlled based on actual usage. The air sweep feature provided permits optimal room air mixing to eliminate hot and cold spots for occupant comfort.

In addition, year-round comfort can be provided with heat pumps.

Table of contents

	Page
Features/Benefits	1-3
Model Number Nomenclature	4
ARI Capacity Ratings	5
Sound Ratings	5
Physical Data	6,7
Base Unit Dimensions	8-11
Electrical Data	12
Typical Piping and Wiring	13
Application Data	14
Typical Wiring Schematics	15-20
Controls	21,22
Guide Specifications — Indoor Unit	23,24
Guide Specifications — Outdoor Unit	25,26

Features/Benefits (cont)

Economical operation

The duct-free split system design allows individual room heating or cooling only where required. There is no need to run large supply-air fans or chilled water pumps to handle a few spaces with unique load patterns. In addition, because air is moved only in the space required, no energy is wasted moving air through ducts.

Features like the rifled copper tube with louvered aluminum plate fin coil provide maximum heat transfer.

Lightweight, compact size

The small footprint of these units provides additional benefits. The exclusive aero acoustics makes these units the most compact in the industry. Because they require minimal service and airflow clearances, condensing units can be located virtually anywhere — on the ground, roof, balcony, or under a deck.

The outdoor unit can be mounted on any type or weight roof, and the indoor units take up little valuable, rentable space. Because they are duct-free, not having to run large ductwork leaves additional space to be rented or utilized, making the building even more profitable.

In addition, the small size makes these units easily moveable. When floor plans change, the units can be quickly reinstalled.

Easy-to-use controls

The microprocessor-based control in the high-wall unit is easy to use, permitting easy changes for maximum comfort. The microprocessor offers the ultimate in comfort and efficiency. All units automatically restart and retain their memories after a power failure, eliminating unnecessary service calls and service disruption. These high wall units are equipped with a wireless remote controller.

Accessories

Customizing these duct-free split systems to your application is easily accomplished. Low-ambient temperature capability (permitting cooling operation down to –20 F outdoor ambient) is easily added on all units.

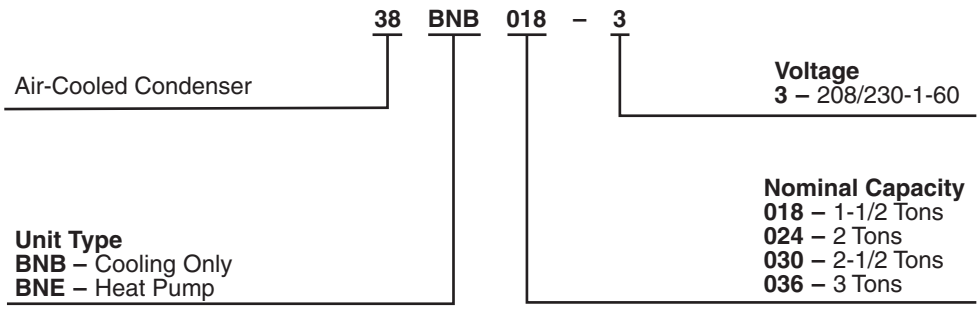
Adding a condensate pump accessory to the high wall fan coil provides installation flexibility.

Agency listings

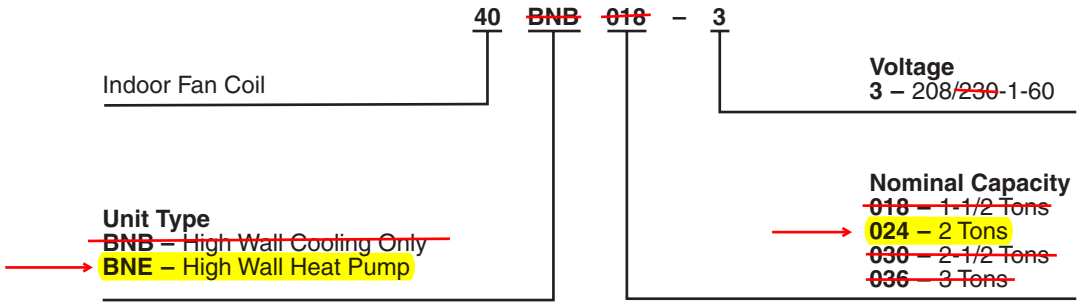
All systems are listed with ARI (Air Conditioning & Refrigeration Institute), UL (Underwriters' Laboratories), and CEC (California Energy Commission).

Model number nomenclature

OUTDOOR UNIT



INDOOR UNIT



ARI* capacity ratings

ARI CAPACITIES HIGH-WALL APPLICATIONS

INDOOR SECTION	OUTDOOR SECTION	STD. CFM		NET COOLING BTUH	TOTAL kW	SEER	EER	HIGH HEAT		
		Indoor	Outdoor					BTUH	COP	HSPF
40BNB018-3	38BNB018-3	726	1,100	18,600	1.90	10.0	9.6	N/A	N/A	N/A
40BNB024-3	38BNB024-3	726	2,400	22,600	2.40	10.5	9.5	N/A	N/A	N/A
40BNB030-3	38BNB030-3	700	2,300	28,000	3.10	10.0	9.1	N/A	N/A	N/A
40BNB036-3	38BNB036-3	970	2,300	33,000	3.80	10.0	8.8	N/A	N/A	N/A
40BNE018-3	38BNE018-3	726	1,100	18,600	1.90	10.0	9.6	18,600	2.90	8.80
40BNE024-3	38BNE024-3	726	2,400	22,600	2.40	10.5	9.5	22,800	2.80	7.00
40BNE030-3	38BNE030-3	700	2,300	28,000	3.10	10.0	9.1	28,000	2.80	7.00
40BNE036-3	38BNE036-3	970	2,300	33,000	3.80	10.0	8.8	33,400	2.00	6.80

LEGEND

COP — Coefficient of Performance
db — Dry Bulb
EER — Energy Efficiency Ratio
HSPF — Heating Seasonal Performance Factor
SEER — Seasonal Energy Efficiency Ratio
wb — Wet Bulb

*Air Conditioning & Refrigeration Institute.

NOTES:
1. Ratings are net values reflecting the effects of circulating fan heat. Ratings are based on:
   Cooling Standard: 80 deg F db, 67 deg F wb air entering evaporator and 95 deg F db air entering condenser.
   High Temperature Heating Standard: 70 deg F db air entering evaporator and 47 deg F db, 43 F wb air entering condenser.
   Low Temperature Heating Standard: 70 deg F db air entering evaporator and 17 deg F db, 15 F wb air entering condenser.
2. Total kW is for total system, including compressor and outdoor and indoor fan motors.
3. Ratings are based on 25 ft of interconnecting refrigerant lines.
4. All system ratings are based on fan coil units operating at high fan speed. Consult Physical Data tables for airflows at all available fan speeds.

Sound ratings

UNIT	SOUND POWER (dba)	SOUND PRESSURE (dba)
38BNB018-3	78.0	51.0
38BNB024-3	78.0	53.0
38BNB030-3	64.0	53.0
38BNB036-3	78.0	53.0
38BNE018-3	78.0	51.0
38BNE024-3	78.0	53.0
38BNE030-3	64.0	53.0
38BNE036-3	78.0	53.0
40BNB018-3	58.0	47.0
40BNB024-3	58.0	47.0
40BNB030-3	58.0	48.0
40BNB036-3	65.0	48.0
40BNE018-3	58.0	47.0
40BNE024-3	58.0	47.0
40BNE030-3	58.0	48.0
40BNE036-3	65.0	48.0

Physical data

INDOOR HIGH WALL UNITS
COOLING AND HEAT PUMP MODELS

UNIT	~~40BNB018~~	~~40BNB024~~	~~40BNB030~~	~~40BNB036~~	~~40BNE018~~	40BNE024	~~40BNE030~~	~~40BNE036~~
NOMINAL CAPACITY (Tons)	1.5	2.0	2.5	3.0	1.5	2.0	2.5	3.0
OPERATING WEIGHT (lb)	27.5	27.5	44.0	83.0	27.5	27.5	44.0	83.0
MOISTURE REMOVAL (pts/hr)	5	7	8	8	5	7	8	8
REFRIGERANT TYPE	R-22	R-22	R-22	R-22	R-22	R-22	R-22	R-22
METERING DEVICE	Capillary	Capillary	Capillary	Capillary	Capillary	Capillary	Capillary	Capillary
CHARGE (lb) NOTE 1	3.1	3.8	4.7	8.0	3.1	3.8	4.7	8.0
INDOOR FAN (Direct Drive)								
High — CFM	726	726	860	950	726	726	860	950
Med — CFM	565	565	730	770	565	565	730	770
Low — CFM	484	484	580	620	484	484	580	620
Motor Horsepower	1/10	1/8	1/8	1/6	1/10	1/8	1/8	1/6
REFRIGERANT LINES								
Connection Type	Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
Liquid Line (in.)	1/4 od	3/8 od	3/8 od	3/8 od	1/4 od	3/8 od	3/8 od	3/8 od
Vapor Line (in.)	1/2 od	5/8 od	5/8 od	3/4 od	1/2 od	5/8 od	5/8 od	3/4 od
Max Length, Lift & Drop (ft)	130/66/66	130/66/66	130/66/66	130/66/66	130/66/66	130/66/66	130/66/66	130/66/66
CONDENSATE DRAIN								
Outside Dia (in.)	5/8 Dia	5/8 Dia	5/8 Dia	5/8 Dia	5/8 Dia	5/8 Dia	5/8 Dia	5/8 Dia
CONTROLS (Microprocessor)								
Remote (Wireless I/R)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Freeze Protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Defrost Method	N/A	N/A	N/A	N/A	Demand	Demand	Demand	Demand
Warm Start	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes
Auto Changeover	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes
Auto Restart	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Diagnostics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Timer Mode (Start/Stop)	24 Hr	24 Hr	24 Hr	24 Hr	24 Hr	24 Hr	24 Hr	24 Hr
Test Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dehumidification Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fan Speeds	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto	H/M/L/Auto
Control Voltage	24v	24v	24v	24v	24v	24v	24v	24v
System Voltage	208/230v	208/230v	208/230v	208/230v	208/230v	208/230v	208/230v	208/230v
AIR SWEEP								
Horizontal	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Vertical	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
FINISH	~~White~~	~~White~~	~~White~~	~~White~~	~~White~~	White	~~White~~	~~White~~

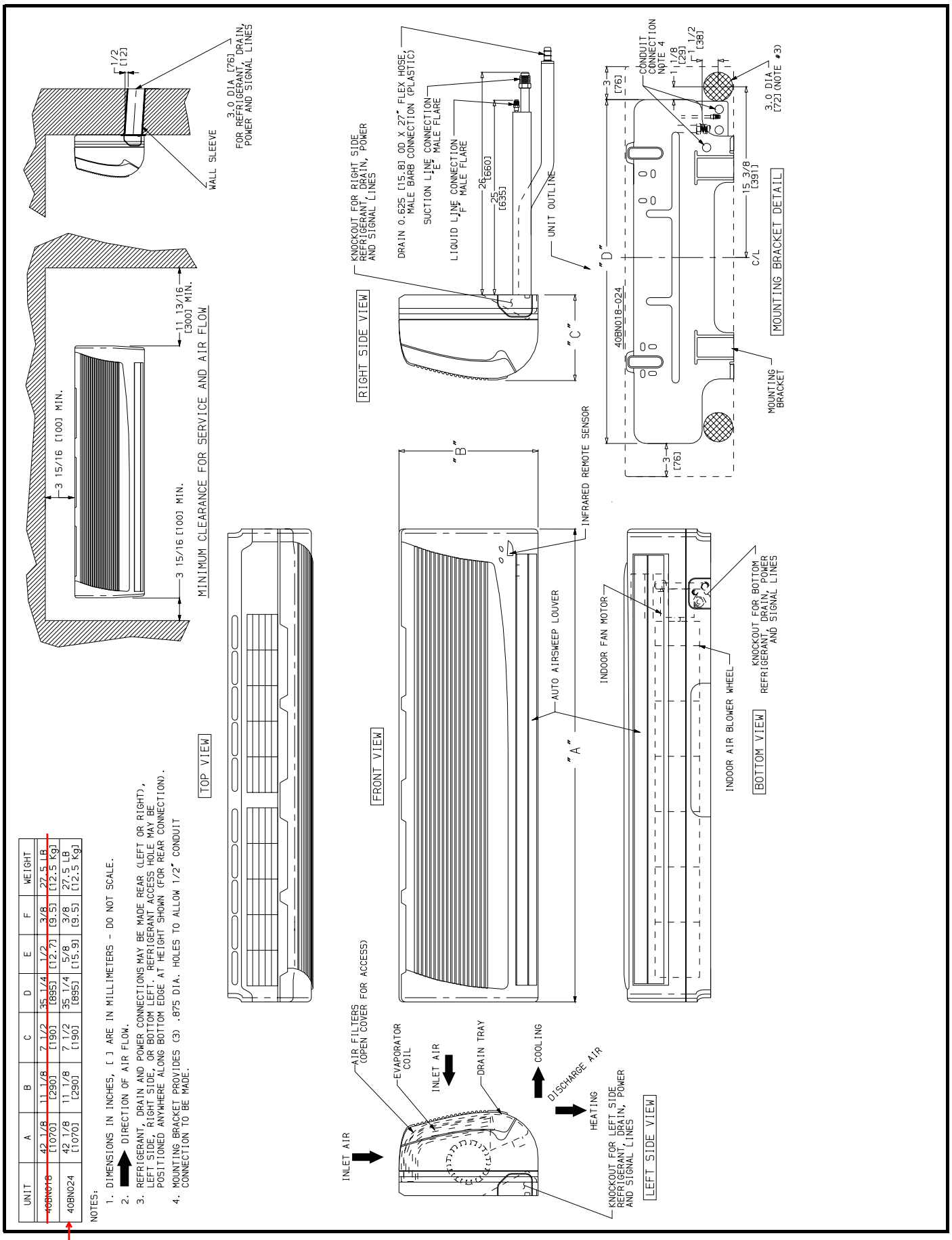
NOTES:
1. Units are shipped with a full factory charge in the outdoor unit based on 25 ft of refrigerant lines.
2. See Application Data section for long line lengths.
3. See matching outdoor unit for line lengths.
4. Capillary in outdoor unit.

OUTDOOR UNITS
COOLING ONLY MODELS

UNIT	~~38BNB018~~	~~38BNB024~~	~~38BNB030~~	~~38BNB036~~	~~38BNE018~~	38BNE024	~~38BNE030~~	~~38BNE036~~
NOMINAL CAPACITY (Tons)	1.5	2.0	2.5	3.0	1.5	2.0	2.50	3.0
OPERATING WEIGHT (lb)	143	187	198	198	143	187	198	198
REFRIGERANT TYPE	R-22	R-22	R-22	R-22	R-22	R-22	R-22	R-22
METERING DEVICE	Cap Tube	Cap Tube	Cap Tube	Cap Tube	Cap Tube	Cap Tube	Cap Tube	Cap Tube
CHARGE (lb)	3.1	3.8	4.7	8.0	3.1	3.8	4.7	8.0
OUTDOOR FAN								
CFM High/Low	1,000/830	2,400/2,050	2,750/1,830	2,455/1,660	1,000/830	2,400/2,050	2,750/1,830	2,455/1,660
Horsepower	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
REFRIGERANT LINES								
Connection Type	Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
Liquid Line (in.)	1/4 od	3/8 od	3/8 od	3/8 od	1/4 od	3/8 od	3/8 od	3/8 od
Vapor Line (in.)	1/2 od	5/8 od	5/8 od	3/4 od	1/2 od	5/8 od	5/8 od	3/4 od
Max Length (ft)	130	130	130	130	130	130	130	130
Max Lift (ft)	66	66	66	66	66	66	66	66
Max Drop (ft)	66	66	66	66	66	66	66	66
COMPRESSOR								
Manufacturer	Bristol	Copeland	Copeland	Copeland	Bristol	Copeland	Copeland	Copeland
Model	H25B18QABC	ZR24K3	ZR30K3	ZR36K3	H29B18UABC	ZR24K3	ZR30K3	ZR36K3
Type	Recip	Scroll	Scroll	Scroll	Recip	Scroll	Scroll	Scroll
Oil Charge (oz)	35.0	38.0	42.0	42.0	35.0	38.0	42.0	42.0
Heater	Yes	No	No	No	Yes	No	No	No
Accumulator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CONTROLS								
Control Voltage	24 v	24 v	24 v	24 v	24 v	24 v	24 v	24 v
System Voltage	208/230	208/230	208/230	208/230	208/230	208/230	208/230	208/230
Defrost Method	N/A	N/A	N/A	N/A	Demand	Demand	Demand	Demand
FINISH	~~Off White~~	~~Off White~~	~~Off White~~	~~Off White~~	~~Off White~~	Off White	~~Off White~~	~~Off White~~

NOTES:
1. Available in 208/230v, single-phase only.
2. Unit shipped with full factory charge.

Base unit dimensions — indoor unit, size 018,024



UNIT	A	B	C	D	E	F	WEIGHT
40BN018	42 1/8 [1070]	11 1/8 [290]	7 1/2 [190]	35 1/4 [895]	1/2 [12.7]	3/8 [9.5]	27.5 LB [12.5 Kg]
40BN024	42 1/8 [1070]	11 1/8 [290]	7 1/2 [190]	35 1/4 [895]	5/8 [15.9]	3/8 [9.5]	27.5 LB [12.5 Kg]

NOTES:

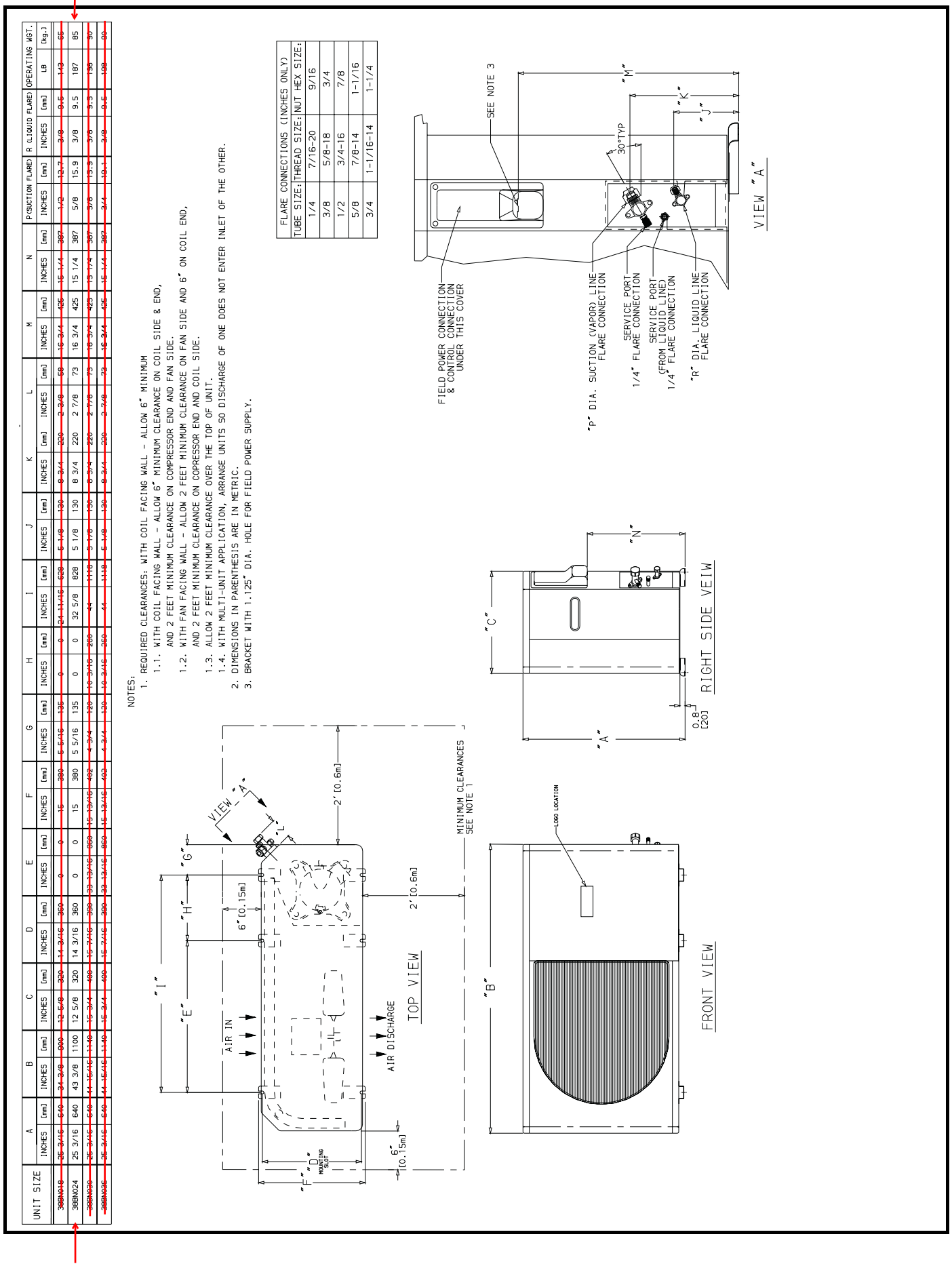
1. DIMENSIONS IN INCHES, [ ] ARE IN MILLIMETERS - DO NOT SCALE.
2. DIRECTION OF AIR FLOW.
3. REFRIGERANT, DRAIN AND POWER CONNECTIONS MAY BE MADE REAR (LEFT OR RIGHT), LEFT SIDE, RIGHT SIDE, OR BOTTOM LEFT. REFRIGERANT ACCESS HOLE MAY BE POSITIONED ANYWHERE ALONG BOTTOM EDGE AT HEIGHT SHOWN (FOR REAR CONNECTION).
4. MOUNTING BRACKET PROVIDES (3) .875 DIA. HOLES TO ALLOW 1/2" CONDUIT CONNECTION TO BE MADE.

Base unit dimensions — outdoor unit

UNIT SIZE	A		B		C		D		E		F		G		H		I		J		K		L		M		N		P(SUCTION FLARE)		R (LIQUID FLARE)		OPERATING WGT.	
	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	INCHES	[mm]	LB	[kg.]
38BNV018	25 3/16	640	31 3/8	800	12 5/8	320	14 3/16	360	0	0	15	380	5 5/16	136	0	0	24 11/16	628	5 1/8	130	8 3/4	220	2 3/8	60	16 3/4	425	15 1/4	387	1/2	12.7	3/8	9.5	143	65
38BNV024	25 3/16	640	43 3/8	1100	12 5/8	320	14 3/16	360	0	0	15	380	5 5/16	135	0	0	32 5/8	828	5 1/8	130	8 3/4	220	2 7/8	73	16 3/4	425	15 1/4	387	5/8	15.9	3/8	9.5	187	85
38BNV030	25 3/16	640	44 15/16	1140	15 3/4	400	15 7/16	390	33 13/16	860	15 13/16	402	4 3/4	120	10 3/16	260	44	1118	5 1/8	130	8 3/4	220	2 7/8	73	16 3/4	425	15 1/4	387	5/8	15.9	3/8	9.5	196	90
38BNV036	25 3/16	640	44 15/16	1140	15 3/4	400	15 7/16	390	33 13/16	860	15 13/16	402	4 3/4	120	10 3/16	260	44	1118	5 1/8	130	8 3/4	220	2 7/8	73	16 3/4	425	15 1/4	387	3/4	19.1	3/8	9.5	198	90

NOTES:
1. REQUIRED CLEARANCES: WITH COIL FACING WALL – ALLOW 6" MINIMUM
   1.1. WITH COIL FACING WALL – ALLOW 6" MINIMUM CLEARANCE ON COIL SIDE & END, AND 2 FEET MINIMUM CLEARANCE ON COMPRESSOR END AND FAN SIDE.
   1.2. WITH FAN FACING WALL – ALLOW 2 FEET MINIMUM CLEARANCE ON FAN SIDE AND 6" ON COIL END, AND 2 FEET MINIMUM CLEARANCE ON COPRESSOR END AND COIL SIDE.
   1.3. ALLOW 2 FEET MINIMUM CLEARANCE OVER THE TOP OF UNIT.
   1.4. WITH MULTI-UNIT APPLICATION, ARRANGE UNITS SO DISCHARGE OF ONE DOES NOT ENTER INLET OF THE OTHER.
2. DIMENSIONS IN PARENTHESIS ARE IN METRIC.
3. BRACKET WITH 1.125" DIA. HOLE FOR FIELD POWER SUPPLY.

FLARE CONNECTIONS (INCHES ONLY)	
TUBE SIZE:	THREAD SIZE: NUT HEX SIZE:
1/4	7/16-20 9/16
3/8	5/8-18 3/4
1/2	3/4-16 7/8
5/8	7/8-14 1-1/16
3/4	1-1/16-14 1-1/4



Electrical data

INDOOR UNITS

UNIT	SIZE	MCA	MOCP	FLA	FAN MOTOR AMPS	COMPRESSOR AMPS	COMPRESSOR LRA
40BNB	018	.5	15	.4	.4	N/A	N/A
	024	.5	15	.4	.4		
	030	.5	15	.4	.4		
	036	.8	15	.6	.6		
40BNE	018	.5	15	.4	.4		
	024	.5	15	.4	.4		
	030	.5	15	.4	.4		
	036	.8	15	.6	.6		

OUTDOOR UNITS

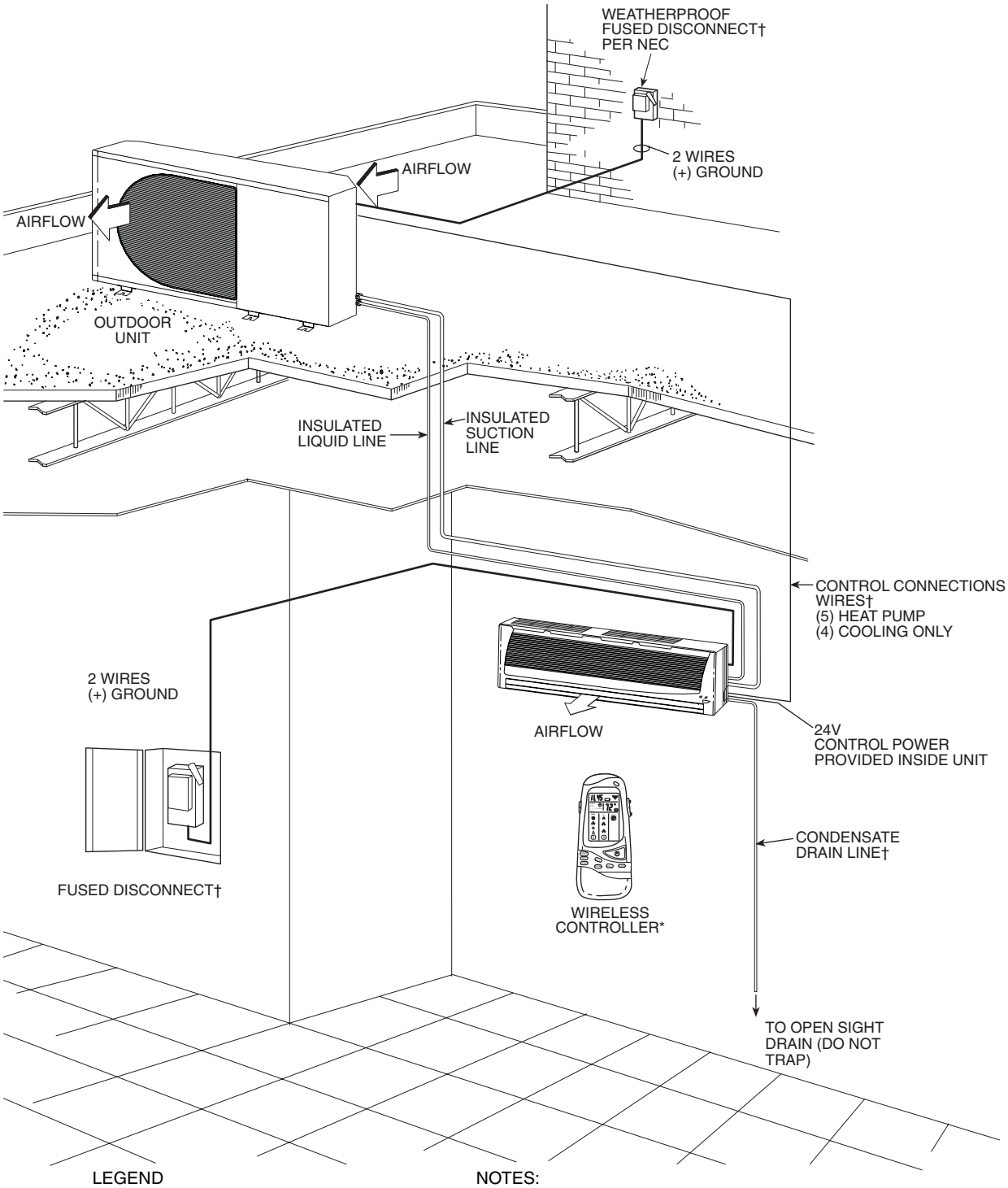
UNIT	SIZE	MCA	MOCP	FLA	FAN MOTOR AMPS	COMPRESSOR AMPS	COMPRESSOR LRA
38BNB	018	11	15	8.2	0.8	7.4	48
	024	19	30	15.0	1.4	13.6	63
	030	21	35	16.8	1.8	15.0	73
	036	25	40	20.2	1.8	18.4	95
38BNE	018	11	15	8.2	0.8	7.4	48
	024	19	30	15.0	1.4	13.6	63
	030	21	35	16.8	1.8	15.0	73
	036	25	40	20.2	1.8	18.4	95

LEGEND

FLA — Full Load Amps
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection

NOTES:
1. If the indoor unit is powered from the outdoor unit, the outdoor MOCP is for both sections.
2. All units are 208/230-1-60, voltage range is 187 min to 253 max.

Typical piping and wiring — high-wall



LEGEND

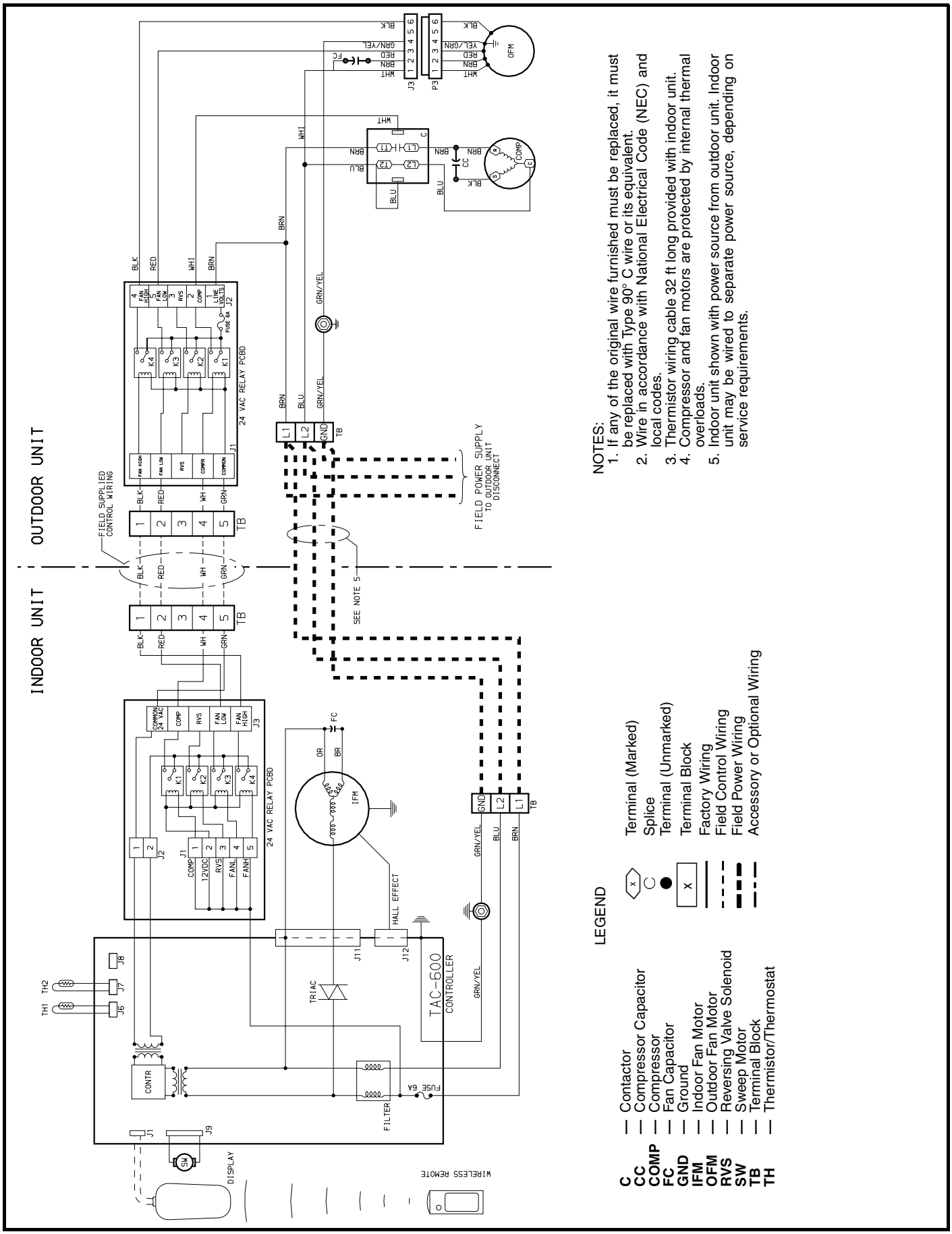
NEC — National Electrical Code
Piping
Line Voltage
24 V
Thermistor

*Standard.
†Field supplied.

NOTES:

1. All piping must follow standard refrigerant piping techniques.
2. All wiring must comply with the applicable local and national codes.
3. Wiring and piping shown are general points-of-connection guides only and are not intended for a specific installation.
4. Insulate condensate drain if installed in a conditioned space.
5. If local code permits, power connections may be run from the outdoor unit to the indoor unit as shown on schematic drawings.

Typical wiring schematics — size ~~018~~, 024 cooling only system


INDOOR UNIT
OUTDOOR UNIT
FIELD SUPPLIED CONTROL WIRING
FIELD POWER SUPPLY TO OUTDOOR UNIT DISCONNECT
SEE NOTE 5
24 VAC RELAY PCBD
TAC-600 CONTROLLER
CONTR
TRIAC
HALL EFFECT
IFM
OFM
COMP
FILTER
FUSE 6A
DISPLAY
WIRELESS REMOTE
NOTES:
1. If any of the original wire furnished must be replaced, it must be replaced with Type 90° C wire or its equivalent.
2. Wire in accordance with National Electrical Code (NEC) and local codes.
3. Thermistor wiring cable 32 ft long provided with indoor unit.
4. Compressor and fan motors are protected by internal thermal overloads.
5. Indoor unit shown with power source from outdoor unit. Indoor unit may be wired to separate power source, depending on service requirements.
LEGEND
Terminal (Marked)
Splice
Terminal (Unmarked)
Terminal Block
Factory Wiring
Field Control Wiring
Field Power Wiring
Accessory or Optional Wiring
C — Contactor
CC — Compressor Capacitor
COMP — Compressor
FC — Fan Capacitor
GND — Ground
IFM — Indoor Fan Motor
OFM — Outdoor Fan Motor
RVS — Reversing Valve Solenoid
SW — Sweep Motor
TB — Terminal Block
TH — Thermistor/Thermostat

Controls

The Duct Free System can be set up and operated from the remote control (provided). If the remote is misplaced, the system can be operated from the "Auto" setting on the unit.

Operating modes

The duct free system has 5 operating modes:

- Cooling
- Fan Only
- Heating (if applicable)
- Dehumidification
- Auto

Cooling — In Cooling mode, the system cools, dries and filters room air.

Fan only — In Fan Only mode, the system filters and circulates room air without changing room air temperature.

Heating — In Heating mode, the system heats and filters room air.

Dehumidification — In Dehumidification mode, the system dries, filters and cools room air. This mode ***does not*** take the place of a dehumidifier.

Auto — In Auto mode, the system will automatically cool or heat room air according to a selected temperature (set point).

If temperature of room air is lower than set point, the system will operate in Heating mode. If temperature of room air is higher than set point, the system will operate in Cooling mode.

Remote control

The remote control transmits commands to set up and operate the system. The controller has a window display panel that shows the current system status. The controller can be secured to a surface when used with the mounting rack provided.

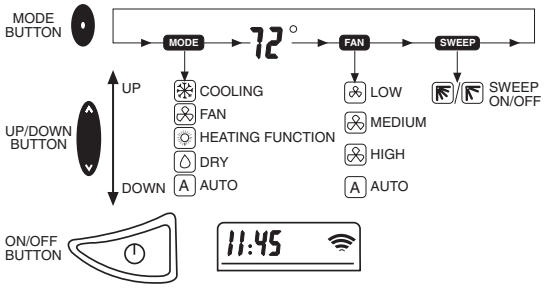
The remote control can perform the following functions:

- Turn the system ON and OFF
- Select operating mode
- Adjust room air temperature and fan speed
- Set time periods for automatic system operation

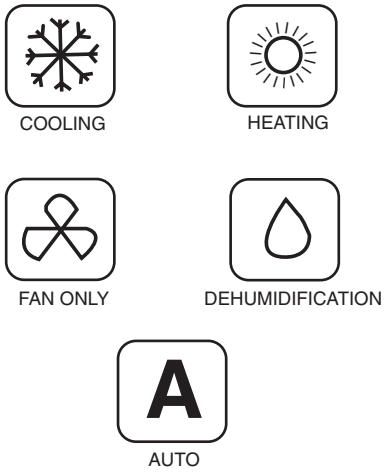
Remote control operation — The remote control has 3 buttons used for operating and controlling the system:

- MODE button — changes operating mode
- UP/DOWN button — selects desired operating mode
- ON/OFF button — turns the system on or off and transmits programing selections to unit.

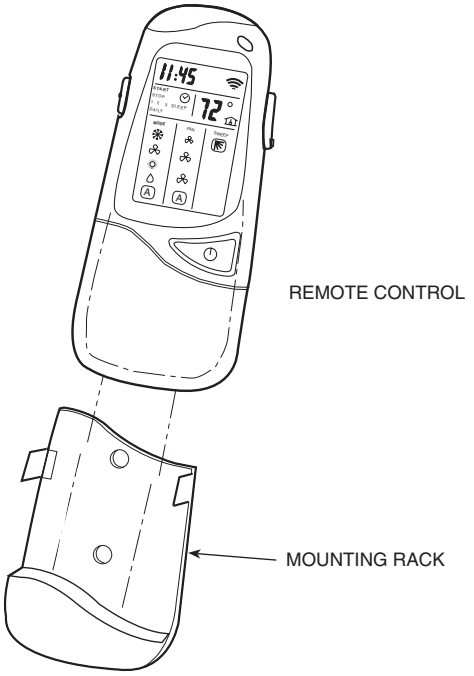
NOTE: When transmitting a command from the controller to the unit, be sure to point the controller toward the right side of the unit. The unit will confirm receipt of a command by sounding 2 audible beeps.



REMOTE CONTROL BUTTONS — PROGRAMMING OPTIONS



OPERATING MODE INDICATORS ON REMOTE CONTROL



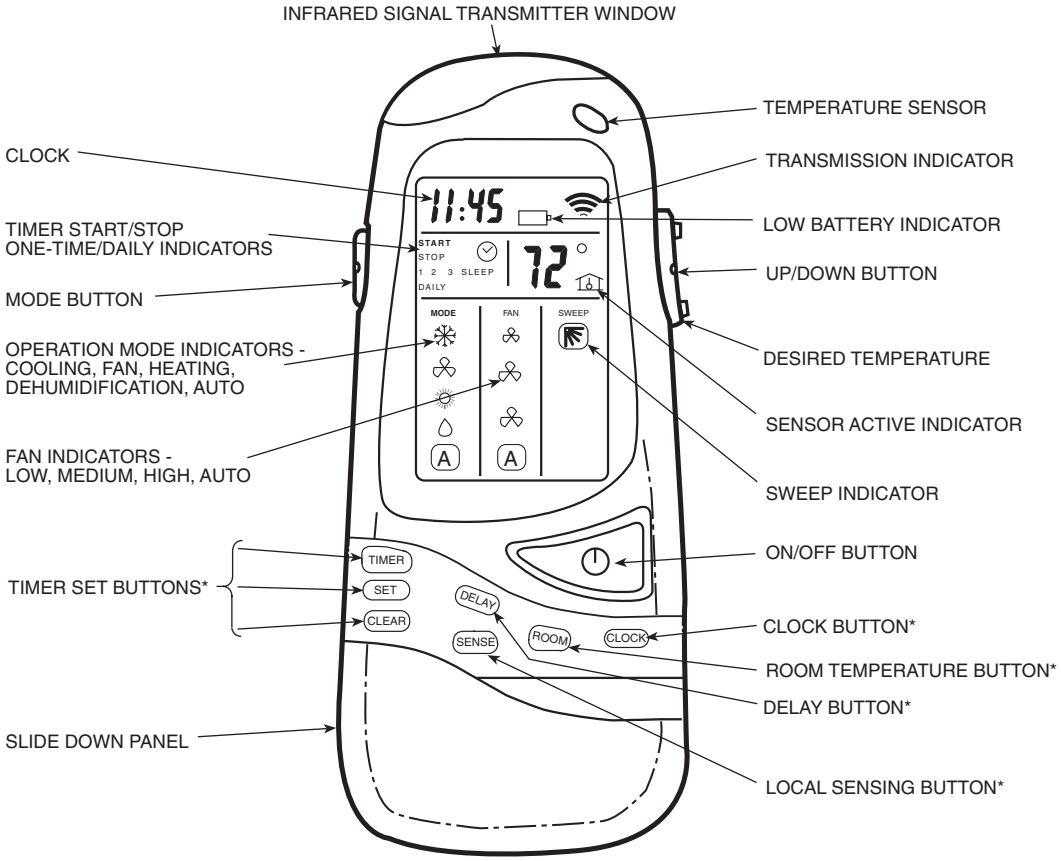
Controls (cont)

NOTE: If unit is operating in Dehumidification mode the fan will only operate in Low speed and cannot be changed.

Temperature settings — The temperature settings can be easily changed by pointing the controller toward the unit and pressing the UP/DOWN button until desired temperature appears on screen. The symbol appears each time the ON/OFF button is pressed.

NOTE: If placing the air deflector in a fixed position is chosen, the deflector stops at the angle in which it was located when the ON/OFF button was pressed.

Programming time periods — The duct free system can be programmed to operate at desired levels. Be sure to set the clock before programming the system.



*Buttons located behind slide down panel.

Digital PD Series
Packaged Terminal Air Conditioners

Purchaser:	P.O. #	Date:
Project:	Location:	
Engineer:	Architect:	
Submitted By:	For Approval:	For Reference:

ITEM	PLAN DESIGNATION	QUANTITY	COOLING BTU/H	VOLTAGE	FRIEDRICH MODEL

ACCESSORIES

PDXWS	Wall Sleeve	Qty			**PXDR10**	Condensate Drain Kit (pkg/10)	Qty	
PXWE	Deep Wall Extension	Qty			**PXSB**	Sub Base	Qty	
PXGA	Standard Outdoor Louver	Qty			**PXDS**	Power Disconnect Switch	Qty	
PXAA	Architectural Louver, clear	Qty			**PXSE**	T-Series Sleeve Adapter	Qty	
PXDB	Architectural Louver, dark bronze	Qty			**PXCJ**	Conduit Kit w/Junction Box	Qty	
PXSC	Architectural Louver, color matched	Qty			**PDXDA**	Lateral Duct Adapter	Qty	
RT2	Electronic Digital Remote Wall-mounted Thermostat	Qty			**PDXDE**	Lateral Duct Extension	Qty	
					PDXFT	Filter kit (10 pack)	Qty	
PDXRT	Remote Thermostat Escutcheon Kit	Qty			**PXPC15/20/30**	Sub Base Power Cord Kit	Qty	

PTAC FEATURES

- Super high energy efficiency, up to 12.2 EER
- Digital Temperature Readout
- Ultra-Quiet Air System
- Remote Thermostat Ready
- Quiet Start/Stop Fan Delay
- One-Touch Operation
- Electronic Temperature Limiting
- Room Freeze Protection
- Random Compressor Restart
- Internal Diagnostic Program
- Desk Control Ready
- Top Mounted Anti-Microbial Air Filters
- UL listed and ARI certified

PDE SERIES HEAT/COOL UNITS - COOLING PERFORMANCE

	Model	Volts	Cooling BTU/h	Cooling		EER	Moisture Removal Pts/h	Sensible Heat Ratio SHR	Indoor Air Flow	Vent CFM	Weight lbs	
				Amps	Watts						Net	Ship
PTAC 1,2,3 →	PDE07K	230/208	7500/7300	3.0	615/598	12.2	2.1	0.76	250	60	105	123
	PDE07R	265	7500	2.7	615	12.2	2.1	0.76	250	60	105	123
	PDE09K	230/208	9200/9000	3.7	814/796	11.3	2.7	0.75	300	60	112	130
	PDE09R	265	9200	3.5	814	11.3	2.7	0.75	300	60	112	130
PTAC 4,5	PDE12K	230/208	12200/11800	5.1	1140/1121	10.7	3.8	0.72	325	70	120	138
	PDE12R	265	12200	4.7	1140	10.7	3.8	0.72	325	70	120	138
→	PDE15K	230/208	15000/14800	8.0	1579/1559	9.5	5.5	0.72	350	70	125	143
	PDE15R	265	15000	8.0	1579	9.5	5.5	0.72	350	70	125	143

4-Wire Photoelectric, Low-Flow Duct Smoke Detector

System Sensor's Innovair DH100ACDCLP reduces the spread of smoke through HVAC air duct systems, including low-flow applications. As a photoelectric detector, it's ultra-responsive to the large smoke particles commonly found in duct systems.

The DH100ACDCLP uses low-flow technology to sense smoke in the lowest air speeds, from 100 to 4,000 feet per minute. When smoke is detected, all interconnected units will initiate their relays. However, to quickly locate the fire source, only the detector sensing smoke will alarm. Two DPDT Form-C relay contacts, connected to auxiliary equipment, can also be configured to prevent the spread of smoke through a particular area.

The DH100ACDCLP is simple to install and maintain. Powered by 24 VAC/DC or 120/240 VAC, it can be easily mounted to round and rectangular ducts, from one to twelve feet in width, with outside mounting tabs. It also offers an adjustable telescopic sampling tube that can be used for duct widths up to 18 inches. This tube locks into place – no additional tools are necessary.

Its modular construction allows for easy cleaning and field replacement of the power and sensor boards. Also simplifying maintenance is a transparent cover that provides convenient visual inspection. If the cover is removed, a patented cover-tamper trouble signal gives a 7-minute delay before the panel or remote accessory is notified of trouble.

At a remote location, the remote test station option ensures that a detector is functioning properly and the remote sounder/LED indicator option signals if a detector is in alarm. However, the cover does not need to be removed if a detector needs to be reset at the detector. Simply push the built-in reset button.

WARNING: Duct smoke detectors are **NOT** a substitute for open area smoke detectors, **NOT** a substitute for early warning detection and **NOT** a replacement for a building's regular fire detection system. Refer to NFPA 72 and 90A for additional information.

Features

- Photoelectric, low-flow technology
- An air velocity rating from 100 feet per minute to 4,000 feet per minute (.5 meters per second to 20.32 meters per second)
- Patented interconnectability for multi-fan shutdown
- Two DPDT Form-C relay contacts
- 24 VAC/DC or 120/240 VAC
- Versatile mounting options
- Outside mounting tabs
- A patented telescopic sampling tube
- Modular construction
- A patented cover-tamper trouble signal
- A transparent cover
- A remote test station
- Remote sounder/LED indicator options
- A built-in reset button

Agency Listings

UL LISTED

Innovair Duct Smoke Detector Specifications

Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor Model DH100ACDCLP Series Duct Smoke Detector. The detector housing shall be UL listed per UL 268A specifically for use in air handling systems. The detector shall operate at air velocities of 100 feet per minute to 4000 feet per minute (0.5 to 20.32 m/sec.). The unit shall be capable of controlling up to ten (10) air handling systems when interconnected with other detectors. The detector shall be capable of providing a trouble signal in the event that the front cover is removed. It shall be capable of local testing via magnetic switch or remote testing using the SSK451 Multi-Signaling Accessory or the RTS451KEY Remote Test Station. The unit shall be reset by local reset button or remote test station. The duct smoke detector housing shall incorporate an airtight smoke chamber in compliance with UL 268A, Standard for Smoke Detectors for Duct Applications. The housing shall be capable of mounting to either rectangular or round ducts without adapter brackets. An integral filter system shall be included to reduce dust and residue effects on detector and housing, thereby reducing maintenance and servicing. Sampling tubes shall either be telescoping or be easily installed by passing through the duct housing after the housing is mounted to the duct. The unit shall provide a spacial separation of no less than ¼˝ (6.4 mm) and/or a physical barrier between the high and low voltage terminals. The enclosure shall meet all applicable NEC and NFPA standards regarding electrical junction boxes. Terminal connections shall be of the strip and clamp method suitable for 12–18 AWG wiring.

Physical Specifications

Size	14⅜˝ (37 cm.) Length; 5½˝ (14 cm.) Width; 2¾˝ (7 cm.) Depth
Shipping Weight	3¾ lbs. (1.7 kg.)
Operating Temperature Range	32° to 131°F (0° to 55°C)
Storage Temperature Range	–22° to +158°F (–30° to +70°C)
Operating Humidity Range	10% to 93% relative humidity non-condensing
Air Duct Velocity	100 to 4000 ft./min. (0.5 to 20.32 m/sec.)

Electrical Ratings – DH100ACDCLP (Includes Detector)

Power supply voltage:	20-29 VDC	24 VAC 50-60 Hz	120 VAC 50-60 Hz	220/240 VAC 50-60 Hz
Input capacitance:	270 μF max.	270 μF max.	N/A	N/A
Reset voltage:	3.0 VDC min.	2.0 VAC min.	10 VAC min.	20 VAC min.
Reset time (with RTS451):	.03 to 0.3 sec.	.03 to 0.3 sec.	.03 to 0.3 sec.	.03 to 0.3 sec.
Reset time (by power down):	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.
Power up time:	34 sec. max.	34 sec. max.	34 sec. max.	34 sec. max.
Alarm response time:	2 to 17 sec.	2 to 17 sec.	2 to 17 sec.	2 to 17 sec.
Sensitivity Test:	See detector label	See detector label	See detector label	See detector label
Current Requirements (Using No Accessories)				
Max. standby current	15 mA	35 mA RMS	25 mA RMS	15 mA RMS*
Max. alarm current	70 mA	125 mA RMS	35 mA RMS*	25 mA RMS*

Contact Ratings

Alarm initiation contacts (SPST)	2.0A @ 30 VAC/DC (0.6 power factor)
Alarm auxiliary contacts (DPDT)	10A @ 30 VDC; 10A @ 250 VAC

Note: Alarm auxiliary contacts must switch 100mA minimum at 5VDC. Alarm auxiliary contacts shall not be connected to initiating circuits of control panels. Use the alarm initiation contact for this purpose.

Trouble contacts (SPDT)	2.0A @ 30 VDC (resistive); 2.0A @ 125 VAC (resistive)

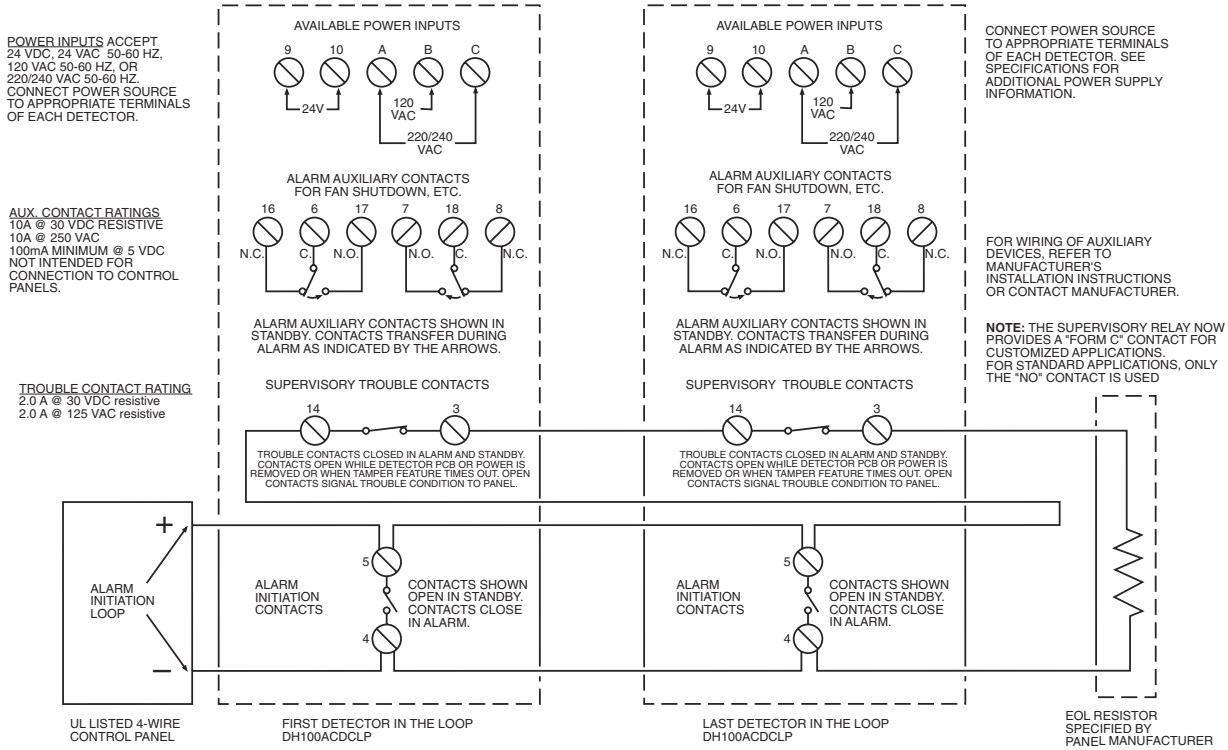
Accessory Current Loads at 24 VDC

Device	Standby	Trouble	Alarm
APA451	12.5 mA Max.	n/a	30 mA Max.
PA400	0 mA	n/a	15 mA Max.
RA400Z	0 mA	n/a	10 mA Max.
RTS451/RTS451KEY	12 mA*	n/a	7.5 mA Max.
SSK451	5 mA Max.	9 mA Max.	30 mA Max.

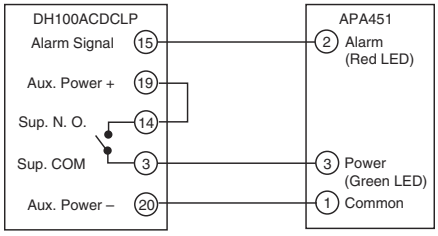
*Note: When a unit is powered at the 120 VAC input, any combination of accessories may be used such that the given accessory loads are: 60 mA or less in the standby state; 110 mA or less in the alarm state.

Wiring Guide

System wiring diagram for 4-wire duct smoke detectors


POWER INPUTS ACCEPT 24 VDC, 24 VAC 50-60 HZ, 120 VAC 50-60 HZ, OR 220/240 VAC 50-60 HZ. CONNECT POWER SOURCE TO APPROPRIATE TERMINALS OF EACH DETECTOR.
AUX. CONTACT RATINGS 10A @ 30 VDC RESISTIVE 10A @ 250 VAC 100mA MINIMUM @ 5 VDC NOT INTENDED FOR CONNECTION TO CONTROL PANELS.
TROUBLE CONTACT RATING 2.0 A @ 30 VDC resistive 2.0 A @ 125 VAC resistive
AVAILABLE POWER INPUTS
9 10 A B C
24V
120 VAC
220/240 VAC
ALARM AUXILIARY CONTACTS FOR FAN SHUTDOWN, ETC.
16 6 17 7 18 8
N.C. C. N.O. N.O. C. N.C.
ALARM AUXILIARY CONTACTS SHOWN IN STANDBY. CONTACTS TRANSFER DURING ALARM AS INDICATED BY THE ARROWS.
SUPERVISORY TROUBLE CONTACTS
14 3
TROUBLE CONTACTS CLOSED IN ALARM AND STANDBY. CONTACTS OPEN WHILE DETECTOR PCB OR POWER IS REMOVED OR WHEN TAMPER FEATURE TIMES OUT. OPEN CONTACTS SIGNAL TROUBLE CONDITION TO PANEL.
ALARM INITIATION LOOP
+
–
ALARM INITIATION CONTACTS
5
4
CONTACTS SHOWN OPEN IN STANDBY. CONTACTS CLOSE IN ALARM.
UL LISTED 4-WIRE CONTROL PANEL
FIRST DETECTOR IN THE LOOP DH100ACDCLP
LAST DETECTOR IN THE LOOP DH100ACDCLP
CONNECT POWER SOURCE TO APPROPRIATE TERMINALS OF EACH DETECTOR. SEE SPECIFICATIONS FOR ADDITIONAL POWER SUPPLY INFORMATION.
FOR WIRING OF AUXILIARY DEVICES, REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS OR CONTACT MANUFACTURER.
NOTE: THE SUPERVISORY RELAY NOW PROVIDES A "FORM C" CONTACT FOR CUSTOMIZED APPLICATIONS. FOR STANDARD APPLICATIONS, ONLY THE "NO" CONTACT IS USED
EOL RESISTOR SPECIFIED BY PANEL MANUFACTURER

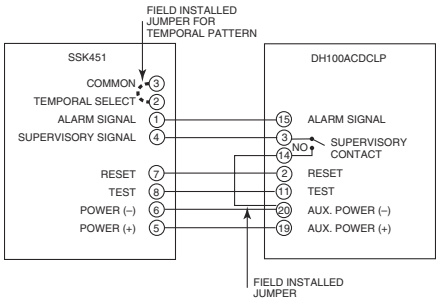
Wiring diagram for DH100ACDCLP to APA451:



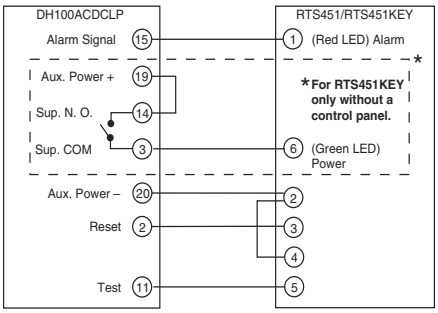
NOTE: Wiring diagram shown is for DH100ACDCLP 4-wire duct smoke detector system equipped without a control panel.

NOTE: A trouble condition is indicated when the green LED is not illuminated.

Wiring diagram for DH100ACDCLP to SSK451:



Wiring diagram for the DH100ACDCLP to RTS451/RTS451KEY:



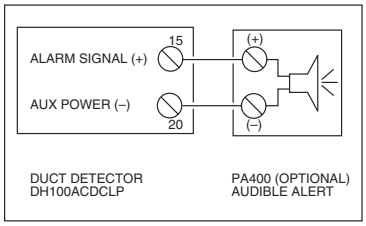
***NOTE: For RTS451KEY only without a Control Panel.**

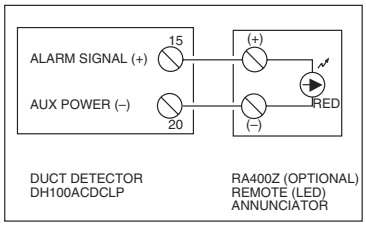
RTS451 does not have a terminal 6.

NOTE: Wiring diagram shown is for DH100ACDCLP 4-wire duct smoke detector system equipped without a control panel.

NOTE: A trouble condition is indicated when the green LED is not illuminated.

Wiring diagrams for optional accessories:





Important Interconnect Notes

- When using the interconnect feature, all interconnected units must be powered with the same, independent supply.
- Polarity must be maintained throughout the interconnect wiring. Connect terminal 12 on unit 1 to terminal 12 on unit 2 and so on. Similarly, connect terminal 1 on unit 1 to terminal 1 on unit 2 and so on.
- Up to 10 units may be interconnected.

Accessories

System Sensor provides system flexibility with a variety of accessories, including two remote test stations, and several different means of visible and audible system annunciation. As with our duct detectors, all duct smoke detector accessories are UL listed.

APA451
Piezo Annunciator
(UL S4011)

RTS451KEY
Remote Test Station
with Key (UL S2522)

PA400W
Mini-Alert Sounder
(UL S3593)
shown with PS24LOW add-on strobe (PS12/24SLENSW smoke lens option available)

RTS451
Remote Test Station
(UL S2522)

RA400Z
Remote Annunciator
(UL S2522)

SSK451
Multi-Signaling
Accessory
(UL 268A)

SSK451
Multi-Signaling Accessory
(UL 268A)
shown with PS24LOW add-on strobe (PS12/24SLENSW smoke lens option available)

Ordering Information

Part No.	Description
DH100ACDCLP	4-wire photoelectric duct detector with low-flow technology
A5190	Replacement 4-wire photoelectric detector board
A5064	Replacement 4-wire power board
Accessories	

ST-1.5	Metal sampling tube duct widths 1´–2´ (0.3–0.6 m)	MOD400R	Sensitivity test module
ST-3	Metal sampling tube duct widths 2´–4´ (0.6–1.2 m)	RA400Z	Remote annunciator alarm LED
ST-5	Metal sampling tube duct widths 4´–8´ (1.2–2.4 m)	F36-09-11	Replacement air filters (two per package)
ST-10	Metal sampling tube duct widths 8´–12´ (2.4–3.7 m)	M02-04-00	Test magnet
T80-71-00	Replacement telescoping sampling tube	P48-21-00	End cap for metal sampling tubes
P48-55-00	Replacement end cap for T80-71-00	S08-39-01	Photo replacement screen
SSK451	Multi-Signaling accessory	PA400W	Mini-Alert sounder
RTS451KEY	Remote test station with key lock	PS24LOW	Mini-Alert add-on strobe
RTS451	Remote test station	PS12/24SLENSW	Wall-mount "SMOKE" lens
APA451	Remote annunciator with piezo alarm	PS12/24SLENSC	Ceiling-mount "SMOKE" lens

SYSTEM SENSOR®

3825 Ohio Avenue • St. Charles, IL 60174
Phone: 800-SENSOR2 • Fax: 630-377-6495

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Product specifications subject to change without notice. Visit systemsensor.com for current product information, including the latest version of this data sheet.
A05-1044-007 • 7/06 • #1676

WHITE-RODGERS

5D51-35, -78 & -90
Fan & Limit Control

INSTALLATION INSTRUCTIONS

Operator: Save these instructions for future use!

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

DESCRIPTION

This fan and limit control combines, in one enclosure, a fan switch with an adjustable differential which operates the blower in a forced warm air furnace and a limit switch with a fixed differential which automatically shuts off the burner if the furnace temperature exceeds a predetermined high point.

A summer fan switch is incorporated in this control to provide a convenient method for manual operation of the fan for air circulation during the summer.

PRECAUTIONS

THIS CONTROL MUST BE INSTALLED BY A QUALIFIED INSTALLER.

All wiring must conform to local and national electrical codes and ordinances.

This control is a precision instrument, and should be handled carefully. Rough handling or distorting components could cause the control to malfunction.

This control has been accurately calibrated at the factory. Any attempt to re-calibrate this control will void the White-Rodgers warranty.

⚠ WARNING

Do not use on circuits exceeding specified voltages. Higher voltages will damage control and could cause shock or fire hazard.

If in doubt about whether your wiring is millivolt, low or line voltage, have it inspected by a qualified heating and air conditioning contractor or a licensed electrician.

⚠ CAUTION

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

Following installation or replacement, follow appliance manufacturers' recommended installation/service instructions to insure proper operation.

INSTALLATION

Removing Cover

To remove cover from control, grasp cover at top and bottom and pull outward. Grasping the cover by its sides will make removal more difficult.

Location

1. The bimetal element should not be too close to any hot surfaces of the heat exchanger. The element should always be at least 3" away from any hot surfaces unless the position has been determined acceptable by the furnace manufacturer.
2. If this is a new application, please consult the original equipment manufacturer for proper location.

Mounting, For Flush Mounting (Vertical or Sloping Surface)

1. Insert the element tube into the bonnet and attach control case with #10 screws. (Two screws, diagonally located, are sufficient.)
2. Replace control cover after wiring and making any adjustments to the settings.

EMERSON

WHITE-RODGERS DIVISION
EMERSON ELECTRIC CO.
9797 REAVIS RD., ST. LOUIS, MO. 63123-5398
(314) 577-1300, FAX (314) 577-1517
9999 HWY. 48, MARKHAM, ONT. L3P 3J3
(905) 475-4653, FAX (905) 475-4625

Printed in U.S.A.

PART NO. 37-1558B
Replaces 37-1558-1
9714

Wiring

All wiring must conform to local and national electrical codes and ordinances.

Connect in accordance with the wiring diagrams provided by the equipment manufacturer. If none are provided, the following represents a typical installation.

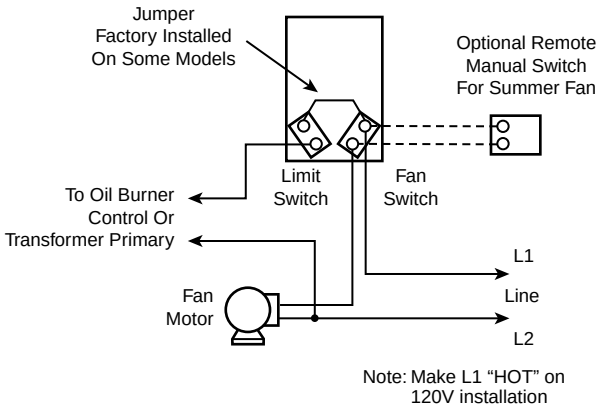


Diagram Using Limit In Line Voltage Circuit

CAUTION: Line voltage jumper is factory installed on some models. This jumper must be removed when limit switch is used in low voltage or millivolt circuit.

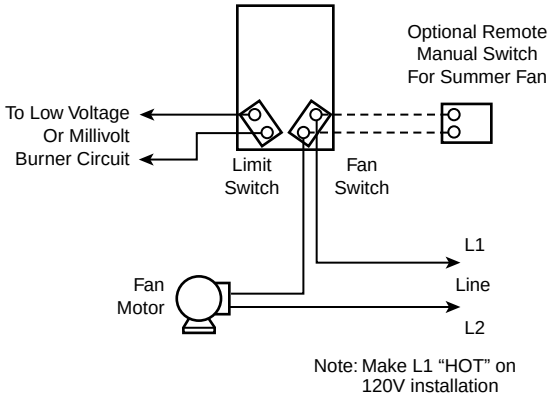


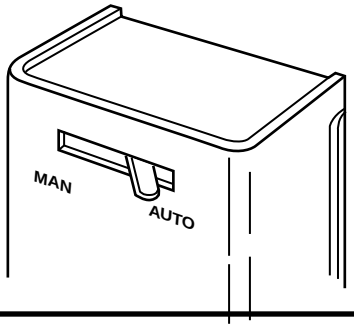
Diagram Using Limit In Low Voltage or Millivolt Circuit

OPERATION

SUMMER FAN OPERATION

The cover does not have to be removed to access the lever. To turn the fan on, slide the lever to the left "MAN" position. To turn the fan off, slide the lever to the right "AUTO" position.

For automatic operation of the fan during the heating or cooling season, the lever must be in the "AUTO" position.



SETTING THE DIAL

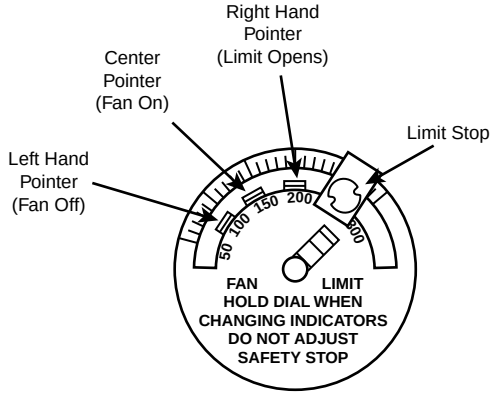
To set pointers, hold dial securely with one hand and move the pointers with the other hand. Do not force the pointers past any stops on the dial even though the dial may be graduated beyond the stops.

Limit

Move the right hand pointer so that its straight edge indicates the temperature at which the contacts should open. The limit pointer should never be set any higher than the setting recommended by the furnace manufacturer.

Fan

Move the "Fan On" pointer so that its straight edge indicates the temperature at which the fan contacts should close to start the blower. Move the "Fan Off" pointer so that its straight edge indicates the temperature at which the fan contacts should open to stop the blower.



MASON INDUSTRIES, Inc.
Manufacturers of Vibration Control Products
NY Mailing Address: PO Box 410, Smithtown, NY 11787
350 Rabro Drive, Hauppauge, NY 11788
631/348-0282
FAX 631/348-0279
Info@Mason-Ind.com

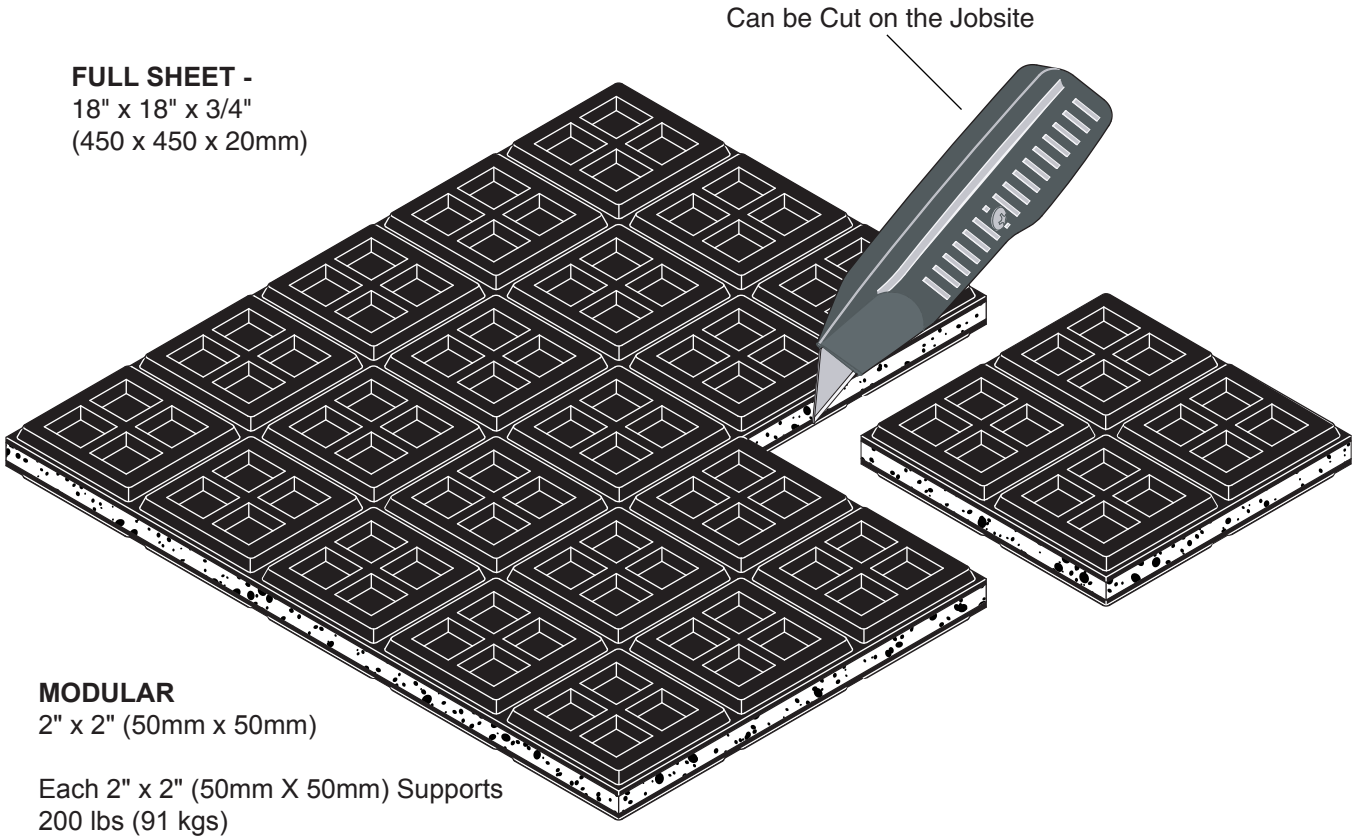
2101 W. Crescent Ave., Suite D, Anaheim, CA 92801
714/535-2727
FAX 714/535-5738
Info@MasonAnaheim.com

CERTIFIED FOR	
JOB NAME	:
CUSTOMER	:
CUSTOMER P.O.	:
MASON M.I.	:
DWG. NO.	:

TYPE

Super K

Natural Rubber
Waffle & Cork
Sandwich Pad



FULL SHEET -
18" x 18" x 3/4"
(450 x 450 x 20mm)

MODULAR
2" x 2" (50mm x 50mm)

Each 2" x 2" (50mm X 50mm) Supports
200 lbs (91 kgs)

CERTIFICATION DATA

DWN :	CHKD:	DATE :	DWG NO. :

HVAC SUBMITTAL

Refrigerant, Tubing and Insulation

Annapolis Towne Centre

Annapolis, Maryland

8-20-07

ATLAS COMFORT SYSTEMS USA

4133 Southerland
Houston, TX. 77092
(713) 460-7300

MUELLER®
INDUSTRIES, INC.

REFERENCE INFORMATION*

COPPER TUBE

Size		Type K		Type L/ACR		Type M		DWV	
NOM	O.D.	HARD	COILS	HARD	COILS	HARD	COILS	HARD	
STANDARD LENGTHS		20' Lengths	60' thru 1-1/2 100' thru 1-1/4 40' and 60'-2" only	20' Lengths	60' thru 1-1/2 100' thru 1-1/4 40' - 2" only	20' Lengths	Consult	20' Lengths	
NOM	O.D.	WALL	WGT/FT	WALL	WGT/FT	WALL	WGT/FT	WALL	WGT/FT
1/4"	3/8"	0.035	0.145	0.030	0.126	0.025	0.106	—	—
3/8"	1/2"	0.049	0.269	0.035	0.198	0.025	0.145	—	—
1/2"	5/8"	0.049	0.344	0.040	0.285	0.028	0.204	—	—
5/8"	3/4"	0.049	0.418	0.042	0.362	0.030	0.263	—	—
3/4"	7/8"	0.065	0.641	0.045	0.455	0.032	0.328	—	—
1"	1-1/8"	0.065	0.839	0.050	0.655	0.035	0.465	—	—
1-1/4"	1-3/8"	0.065	1.04	0.055	0.884	0.042	0.682	0.040	0.650
1-1/2"	1-5/8"	0.072	1.36	0.060	1.14	0.049	0.940	0.042	0.809
2"	2-1/8"	0.083	2.06	0.070	1.75	0.058	1.46	0.042	1.07
2-1/2"	2-5/8"	0.095	2.93	0.080	2.48	0.065	2.03	—	—
3"	3-1/8"	0.109	4.00	0.090	3.33	0.072	2.68	0.045	1.69
3-1/2"	3-5/8"	0.120	5.12	0.100	4.29	0.083	3.58	—	—
4"	4-1/8"	0.134	6.51	0.110	5.38	0.095	4.66	0.058	2.87
5"	5-1/8"	0.160	9.67	0.125	7.61	0.109	6.66	0.072	4.43
6"	6-1/8"	0.192	13.90	0.140	10.20	0.122	8.92	0.083	6.10
8"	8-1/8"	0.271	25.90	0.200	19.30	0.170	16.46	—	—

FOR SPECIAL LENGTHS OR TEMPERS CONSULT TUBE PRODUCTS DIVISION FOR PRICE AND AVAILABILITY

REFRIGERATION SERVICE TUBE

O.D. Size	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1-1/8"	1-3/8"	1-5/8"
WALL THICKNESS	0.030	0.030	0.030	0.032	0.032	0.032	0.035	0.035	0.045	0.050	0.055	0.060
WEIGHT PER FOOT	0.0347	0.0575	0.0804	0.109	0.134	0.182	0.251	0.305	0.455	0.655	0.884	1.14
WEIGHT PER COIL+	1.74	2.88	4.02	5.45	6.70	9.10	12.55	15.25	22.75	32.75	44.20	57.00
COIL DIAMETER	14-3/4"	14-3/4"	14-3/4"	16-1/2"	16-1/2"	20"	22"	25"	27-1/2"	34-1/2"	39-1/2"	42"
COILS PER MASTER	10	10	10	10	10	5	5	3	3	—	—	—
WEIGHT PER MASTER	17.4	28.80	40.20	54.50	67.00	45.50	62.75	45.75	22.75	32.75	44.20	57.00

+STANDARD 50 FT. COIL – 100 FT COILS ALSO AVAILABLE AS STANDARD STOCK ITEM

TEMPERATURE CONTROL TUBE

PACKED 2000 FT PER WOOD BOX

O.D.	WALL	WGT/FT
1/4	0.025	0.0685

O.D.	WALL	WGT/FT
1/4	0.032	0.0849

PLASTIC COATED COPPER TUBE

Polyethylene coating made from low density LDPE resin and is extruded at 0.025" minimum wall.

*REFERENCE WALL THICKNESS, WEIGHTS , AND WGT/FT ARE NOMINAL.

INSUL-TUBE®

Pipe Insulation
Flexible Closed Cell Insulation

Made in America
Designed for the HVAC/R Industry

DESCRIPTION
INSUL-TUBE® Pipe Insulation is an environmentally friendly, CFC-free, flexible elastomeric thermal insulation. It is black in color, identified as INSUL-TUBE®, and is available in unslit tubular form in wall thicknesses of 3/8",1/2", 3/4", 1" or 1-1/2" in sizes ranging from 3/8" I.D. to 8" IPS. **INSUL-TUBE® key physical properties are approved through supervision by Factory Mutual Research Corporation.**

INSUL-TUBE® is non-porous, non-fibrous and resists mold growth.

APPLICATIONS
INSUL-TUBE® is used to retard heat gain and prevent condensation or frost formation on refrigerant lines, cold water plumbing, and chilled water systems. It also retards heat flow for hot water plumbing, liquid heating, dual temperature piping, and many solar systems. INSUL-TUBE® is designed for the HVAC and Refrigeration industry.

INSUL-TUBE® is recommended for applications ranging from -297°F to 220°F (-182°C to 104°C). The expanded closed cell structure makes INSUL-TUBE® an efficient insulator and provides effective moisture vapor resistance. INSUL-TUBE® can be used with heat tracing/heat tapes.

INSUL-TUBE® has a very tough skin which withstands tearing, rough handling, and severe environmental conditions, and yet is quite flexible for easy installation. INSUL-TUBE® has superior cold weather flexibility.

INSTALLATION
With a factory-applied coating of talc on the smooth inner surface, INSUL-TUBE® slides easily over pipe or tubing for quick installation. When applied to existing lines, tubing is slit lengthwise and fitted into place. (Slitting can be done on the job with a sharp knife or pre-slit INSUL-TUBE® is available on request.) All seams and butt joints should be sealed with an approved contact adhesive, making sure both surfaces to be joined are coated with adhesive. Fittings are fabricated from miter-cut tubular sections and cover, flanges, etc., from INSUL-SHEET®.

OUTDOOR APPLICATIONS
INSUL-TUBE® Pipe Insulation is made from a UV resistant elastomeric blend. For moderate UV exposure, no additional protective coating is needed. However, for severe UV exposure (rooftop applications) or where optimum performance is required, R-374 Protective Coating or approved jacketing or cladding should be used. *For more detailed information refer to the Installation Guidelines.*

UNDERGROUND
For buried lines above the water table, use a clean fill such as sand (3"-5" layer) to protect INSUL-TUBE® before backfilling. It is recommended that materials to be buried are properly sealed at all seams and butt joints with an approved contact adhesive. For optimum performance, the lines should be encased in a conduit to protect them from problems associated with ground water.

RESISTANCE TO MOISTURE VAPOR FLOW
The closed-cell structure and unique formulation of INSUL-TUBE® effectively retards the flow of moisture vapor, and is considered a low transmittance vapor retarder. For most indoor applications, INSUL-TUBE® needs no additional protection.

Additional vapor barrier protection may be necessary for INSUL-TUBE® when installed on low temperature surfaces that are exposed to continuous high humidity.

FLAME AND SMOKE RATING
INSUL-TUBE® Pipe Insulation in wall thicknesses of 1-1/2" (38 mm) and below has a **flame spread rating of 25 or less and a smoke development rating of 50 or less** as tested by ASTM E 84 Method of Testing entitled: "Surface Burning Characteristics of Building Materials."

Duct/Plenum Applications
INSUL-TUBE® is acceptable for duct/plenum applications, meeting the requirements of NFPA 90A.

Numerical flammability ratings alone may not define the performance of products under actual fire conditions. They are provided only for us in the selection of products to meet limits specified, when compared to a known standard.

SPECIFICATION COMPLIANCE
ASTM C 534 Type 1 (Tubing)
ASTM D 1056-00-2C1
New York City MEA 186-86-M Vol. IV
USDA Requirements

UL 94-5V Flammability Classification
(Recognition No. E300774)
ASTM E 84 1-1/2" 25/50-tested according to UL 723 and NFPA 255
Complies with requirements of CAN/ULC S102-M88

FMRC 2006 Approval Guide
Chapter 14 Pipe Insulation

NFPA No. 101 Class A Rating

Meets requirements of NFPA 90A Sect. 2.3.3 for Supplementary Materials for Air Distribution Systems

Meets requirements of ASTM C 411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation)

Meets requirements of UL 181 sections 11.0 and 16.0 (Mold Growth/Air Erosion)

MIL-P-15280, For T (Tubing)

INSUL-TUBE® Pipe Insulation

PRODUCT DATA

Physical Properties		INSUL-TUBE® Insulation	Test Methods
Thermal Conductivity (K) BTU -in/hr - Ft^2 - °F (W/mK)	90° F (32° C) Mean Temp 75° F (24° C) Mean Temp 50° F (10° C) Mean Temp	.270 (.039) .265 (.038) .260 (.037)	ASTM C 177/C 518 ASTM C 177/C 518 ASTM C 177/C 518
Operating Temperature Range	Upper	220° F (104° C)	
Flexible to -40° F (-40° C)	Lower	-297° F (-182° C)	
Water Vapor Permeability Dry Cup. Perm-In		.05	ASTM E 96
Water Absorption %		.20 by volume	C209
Flame Spread (up to 1-1/2" wall)		Not greater than 25	ASTM E 84
Smoke Developed (up to 1-1/2" wall)		Not greater than 50	ASTM E 84
Ozone Resistance		Pass	ASTM D 1171
Chemical/ Solvent Resistance		Good	
Mildew Resistance/Air Erosion		Pass	UL 181
UV Weather Resistance		Pass	QUV Chamber Test

Thickness Recommendations* - To Control Condensation

Pipe Size	Line Temp 50°F	10°C	Line Temp 35°F	2°C	Line Temp 0°F	-18°C	Line Temp -20°F	-29°C
Normal Conditions (Max 85°F, 29°C - 70% R.H.)								
3/8" I.D. thru 1-3/8" I.D.	3/8"	10 mm	1/2"	13 mm	3/4"	19 mm	1"	25 mm
Over 1-3/8" thru 3" IPS	3/8"	10 mm	1/2"	13 mm	1"	25 mm	1"	25 mm
Over 3" IPS thru 4" IPS**	1/2"	13 mm	1/2"	13 mm	1"	25 mm	1-1/2"	38 mm
Over 4" IPS	1/2"	13 mm	3/4"	19 mm	1"	25 mm	1-1/2"	38 mm
Mild Conditions (Max 80°F, 26°C - 50% R.H.)								
3/8" I.D. thru 2-1/8" I.D.	3/8"	10 mm	3/8"	10 mm	1/2"	13 mm	1/2"	13 mm
Over 2-1/8" thru 3" IPS	3/8"	10 mm	3/8"	10 mm	1/2"	13 mm	3/4"	19 mm
Over 3" IPS thru 4" IPS**	1/2"	13 mm	1/2"	13 mm	3/4"	19 mm	3/4"	19 mm
Over 4" IPS	1/2"	13 mm	1/2"	13 mm	3/4"	19 mm	3/4"	19 mm
Severe Conditions (Max 90°F, 32°C - 80% RH)								
3/8" I.D. thru 1-1/8" I.D.	3/4"	19 mm	3/4"	19 mm	1-1/2"	38 mm	1-1/2"	38 mm
Over 1-1/8" I.D. thru 4" IPS	3/4"	19 mm	1"	25 mm	1-1/2"	38 mm	1-1/2"	38 mm
Over 4" IPS	3/4"	19 mm	1"	25 mm	1-3/4"	44 mm	2"	50 mm

*INSUL-TUBE® in thickness noted within the specified temperature ranges will prevent condensation on indoor piping under design conditions defined below.
Thickness recommendations above 1.5" can be sleeved to achieve thickness desired. Subject to compliance with applicable code requirements.
Normal: Maximum severity of indoor conditions seldom exceed 85°F (29°C) and 70% R.H. in United States.
Mild: Typical conditions are most air-conditioned spaces and arid climates.
Severe: Generally found in areas where excessive moisture is introduced or in poorly ventilated areas where the temperature may be depressed below the ambient. Under conditions of higher humidity, additional thickness of insulation may be required.

**Available: Nom. 1/2" or Nom. 3/4" thickness only.

INSUL-TUBE® "R" Values

Pipe O.D. or Nominal Insulation I.D.		R Value 3/8" (10 mm) Wall	R Value 1/2" (13 mm) Wall	R Value 3/4" (19 mm) Wall	R Value 1" (25 mm) Wall	R Value 1 1/2" (38 mm) Wall
3/8"	10 mm	2.5	3.3	5.2	——	——
1/2"	13 mm	2.4	3.1	5.0	——	——
5/8"	16 mm	2.3	3.0	5.0	7.2	——
3/4"	19 mm	2.2	3.0	5.0	7.2	——
7/8"	22 mm	2.1	3.0	5.0	7.0	13.0
1-1/8"	29 mm	2.1	2.9	5.1	6.6	12.0
1-3/8"	35 mm	2.0	2.9	4.9	6.8	11.4
1-5/8"	41 mm	2.2	2.9	4.8	6.6	10.9
1-1/2" IPS	48 mm	2.3	2.7	4.5	6.3	10.5
2-1/8"	54 mm	2.2	2.8	4.5	6.1	10.2
2" IPS	60 mm	2.2	2.7	4.4	6.0	9.9
2-1/2" IPS	64 mm	2.1	2.8	4.3	5.9	9.5
2-5/8"	67 mm	2.0	2.7	4.3	5.8	9.5
3-1/8"	79 mm	2.0	2.7	4.1	5.6	9.1
3" IPS	89 mm	2.1	3.0	4.2	5.7	9.2
3-5/8"	92 mm	2.0	2.8	4.1	5.5	8.9
4-1/8"	105 mm	2.0	2.8	4.1	5.4	8.7
4" IPS	114 mm	——	3.0	4.4	5.6	8.9
5" IPS	140 mm	——	2.8	4.2	5.3	——
6" IPS	168 mm	——	2.8	4.1	5.3	——
8" IPS	219 mm	——	2.8	4.0	——	——

Note: "R" factors were calculated using a K factor of .265 (75°F, 24°C mean temp.) and nominal wall thickness is each case. Lower operating temperatures will result in improved R values. Contact Technical Services for specific recommendations.

NOMACO K-FLEX

Nomaco K-Flex, 100 Nomaco Drive, Youngsville, North Carolina 27596 p 800-765-6475 f 800-765-6471

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CRESLINE®

CRESLINE PLASTIC PIPE CO., INC.

PVC PRESSURE PIPE SDR-26 & SDR-21

FORM NO. 761LW SPECIFICATIONS
PRICES ARE LISTED ON FORM MLP-2.
FITTINGS ARE LISTED ON FORM 766 LW.
PVC CEMENT ON FORM 466.
PLEASE ORDER BY PART NUMBER.

MAY, 2006

PPFA MEMBER PLASTIC PIPE AND FITTINGS ASSOCIATION

	SIZE	O.D.	MIN. WALL	WEIGHT PER 100'	SOCKET DEPTH INCHES	FEET PER PALLET	PALLETS PER T.L.	BELLED PART NO.
SDR-26 PRESSURE PIPE 160 PSI PVC1120 ASTM D-2241 NSF POTABLE WATER	1¼"	1.660	.064	20.93	2.750	4000	32	45243
	1½	1.900	.073	27.31	3.000	3600	28	45280
	2	2.375	.091	42.51	3.000	2800	24	45345
	2½	2.875	.110	62.13	3.500	2240	20	45410
	3	3.500	.135	92.81	4.000	1500	20	45470
	4	4.500	.173	156.97	5.000	580	28	47075
	6	6.625	.255	342.71	6.500	400	20	47120
	8	8.625	.332	581.78	7.000	280	16	47735

NOTE: 8" SDR-26 IS DUAL MARKED FOR SCH-40 PIPE.

SDR-21 PRESSURE PIPE 200 PSI PVC1120 ASTM D-2241 NSF POTABLE WATER	*½"	.840	.062	9.81	2.000	8400	44	46105
	¾	1.050	.060	12.11	2.125	6600	40	46157
	1	1.315	.063	16.17	2.375	5400	32	46207
	1¼	1.660	.079	25.59	2.750	4000	32	46243
	1½	1.900	.090	33.32	3.000	3600	28	46285
	2	2.375	.113	52.32	3.000	2800	24	46345
	2½	2.875	.137	76.53	3.500	2240	20	46410
	3	3.500	.167	113.71	4.000	1500	20	46470
	4	4.500	.214	192.22	5.000	580	28	47275
	6	6.625	.316	420.11	6.500	400	20	47320
	8	8.625	.410	710.96	7.000	280	16	47335

*SDR 13.5 - 315 PSI
NOT RECOMMENDED FOR THREADING.
STANDARD LENGTH 20 FT. EXCEPT 4, 6 AND 8 IN. DIA. WHICH ARE 20 FT. LAYING LENGTH.

CRESLINE PLASTIC PIPE CO., INC. www.cresline.com

600 Cross Pointe Blvd.	Evansville, IN 47715	812-428-9350	Fax 812-428-9353
264 Silver Spring Rd.	Mechanicsburg, PA 17050	717-766-2566	Fax 717-697-2371
2100 South 35th St.	Council Bluffs, IA 51501	712-322-2294	Fax 712-322-6673
3801 East Hwy. 31	Corsicana, TX 75109	903-872-8475	Fax 903-872-7732

PRESSURE RATINGS
FOR CRESLINE - PVC PIPES
AT 73.4° F

SIZE	½	¾	1	1¼	1½	2	2½	3	4	6	8
SDR-26	--	--	--	160	160	160	160	160	160	160	160
SDR-21	315	200	200	200	200	200	200	200	200	200	200

CONVERSION CHART FOR PRESSURE RATINGS
AT VARIOUS TEMPERATURES FOR CRESLINE - PVC PIPES

TEMPERATURE °F	73.4°	80°	90°	100°	110°	120°	130°	140°
CONVERSION FACTOR	1.00	.88	.75	.62	.50	.40	.30	.22

PRESSURE RATING IS THE ESTIMATED MAXIMUM PRESSURE THAT WATER AS THE MEDIUM IN THE PIPE CAN EXERT CONTINOUSLY FOR A LONG TIME WITH A HIGH DEGREE OF CERTAINTY THAT FAILURE OF THE PIPE WILL NOT OCCUR.

DO NOT USE PLASTIC PIPE AND FITTINGS FOR COMPRESSED AIR.

PALLET QUANTITIES PVC PRESSURE PIPE

PIPE SIZE	FEET PER PALLET	WT. PER PALLET	
		SDR-26	SDR-21
½	8400	--	824
¾	6600	--	799
1	5400	--	873
1¼	4000	837	1024
1½	3600	984	1200
2	2800	1191	1465
2½	2240	1392	1714
3	1500	1392	1706
4	580	910	1115
6	400	1371	1681
8	280	--	1991

PVC SDR-26, SDR-21, CAN BE USED ON JET OR SUBMERSIBLE PUMPS OF 1HP OR LESS

MAXIMUM DEPTH SETTINGS TO WATER LEVEL IN FT @ 73.4° F			
CRESLINE PVC PRESSURE PIPE	MAX. TANK SHUT-OFF PRESSURE		
	40 PSI	50 PSI	60 PSI
ANY SIZE PVC SDR-26	275'	255'	230'
ANY SIZE PVC SDR-21	365'	345'	320'

PPFA MEMBER PLASTIC PIPE AND FITTINGS ASSOCIATION

NSF POTABLE WATER

CRESLINE PLASTIC PIPE CO., INC. www.cresline.com

600 Cross Pointe Blvd.	Evansville, IN 47715	812-428-9350	Fax 812-428-9353
264 Silver Spring Rd.	Mechanicsburg, PA 17050	717-766-2566	Fax 717-697-2371
2100 South 35th St.	Council Bluffs, IA 51501	712-322-2294	Fax 712-322-6673
3801 East Hwy. 31	Corsicana, TX 75109	903-872-8475	Fax 903-872-7732

HVAC SUBMITTAL

Thermostats

Annapolis Towne Centre

Annapolis, Maryland

8-20-07

ATLAS COMFORT SYSTEMS USA

4133 Southerland
Houston, TX. 77092
(713) 460-7300

Medallion Digital Thermostats

Features:

- Available in programmable and non-programmable models
- Programmable models are Energy Star rated
- Available in battery and hardwired models
- Large LCD display
- Attractive design with slide system switches and large push buttons for temperature setting
- Adjustable dead band (auto-changeover models only)
- Non-volatile memory chip to prevent programmed memory loss in the event of power outage (programmable models only)
- Safety thermostat to prevent against freeze-up (battery models only)
- Backlight (on selected models)
- Remote sensing (on selected models)
- Mounting backplate available for single stage non-programmable models (see Accessories)
- Custom imprinting available - contact Customer Service for details

Specifications:

Power:	Battery or hardwired 24 VAC (depending on model)
Load Rating:	24 VAC at 1 amp
Range:	40°F to 90°F
Accuracy:	±1°F
Differential:	1°F (selected models adjustable 0.5 to 2.0°F)
Time Delay:	3 Minutes
Case:	Plastic, white
Internal Selector Jumper:	Electric Heat/Oil or Gas Heat
Safety Limit:	Heat 40° (battery models only)
Wiring:	Screw terminal strip

Medallion Digital Thermostats

Model No.	Stages	Power	System Switches	Fan Switches	Other Features
Single Stage Non-Programmable (dimensions 2.9Wx2.9Hx1.2D)					
TDM24-H1	Heat Only	Battery	Ht/Off	None	
TDM24-H1NS	Heat Only	Battery	None	None	No switches
TDM24-AH11	1 Cl/1 Ht	Battery	Cl/Off/Ht	Auto/On	
TDM24-AH11-C*	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	Remote Sensing avail.**
TDM24-H1-CB*	Heat Only	Hardwired	Ht/Off	None	Backlit; Remote Sensing avail.**
TDM24-AH11-CB*	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
Single Stage Non-Programmable w/ ServiceWatch® (dimensions 5.0Wx5.0Hx1.2D)					
TDMS24-AH11-CB*	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
TDAS24-AH11-CB*	1 Cl/1 Ht	Hardwired	Auto/Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
Single Stage Programmable					
TDMP24-H1	Heat Only	Battery	Ht/Off	None	
TDMP24-AH11	1 Cl/1 Ht	Battery	Cl/Off/Ht	Auto/On	
TDMP24-H1-CB*	Heat Only	Hardwired	Ht/Off	None	Backlit; Remote Sensing avail.**
TDMP24-AH11-CB*	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
TDMP24-AH11-M3F	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	Backlit; 3-Speed Fan Control
TDAP24-AH11-M3F	1 Cl/1 Ht	Hardwired	Auto/Cl/Off/Ht	Auto/On	Backlit; 3-Speed Fan Control
TDMPS24-AH11-CB*	1 Cl/1 Ht	Hardwired	Cl/Off/Ht	Auto/On	ServiceWatch®; Backlit; Remote Sensing avail.**; Outdoor Sensor avail.
Multi Stage Non-Programmable (dimensions 5.0Wx5.0Hx1.2D)					
TDMS24-AH22-CB*	2 Cl/2 Ht	Hardwired	Cl/Off/Ht	Auto/On	ServiceWatch®; Backlit; Remote Sensing avail.**
TDAS24-AH22-CB*	2 Cl/2 Ht	Hardwired	Auto/Cl/Off/Ht	Auto/On	ServiceWatch®; Backlit; Remote Sensing avail.**
TDMHP24-AH12-B*	1 Cl/2 Ht	Hardwired	Cl/Off/Ht/EH	Auto/On	Heat Pump; ServiceWatch®; Backlit; Remote Sensing avail.**
TDAHP24-AH12-B*	1 Cl/2 Ht	Hardwired	Auto/Cl/Off/Ht/EH	Auto/On	Heat Pump; ServiceWatch®; Backlit; Remote Sensing avail.**
Multi Stage Programmable (dimensions 5.0Wx5.0Hx1.2D)					
TDMP24-AH22-CB*	2 Cl/2 Ht	Hardwired	Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
TDAP24-AH22-CB*	2 Cl/2 Ht	Hardwired	Auto/Cl/Off/Ht	Auto/On	Backlit; Remote Sensing avail.**
TDMPHP-AH12-B*	1 Cl/2 Ht	Hardwired	Cl/Off/Ht/EH	Auto/On	Heat Pump; Backlit; Remote Sensing avail.**
TDAPHP-AH12-B*	1 Cl/2 Ht	Hardwired	Auto/Cl/Off/Ht/EH	Auto/On	Heat Pump; Backlit; Remote Sensing avail.**
TDMPS24-AH22-CB*	2 Cl/2 Ht	Hardwired	Cl/Off/Ht	Auto/On	ServiceWatch®; Backlit; Remote Sensing avail.**; Outdoor Sensor avail.
TDAPS24-AH22-CB*	2 Cl/2 Ht	Hardwired	Auto/Cl/Off/Ht	Auto/On	ServiceWatch®; Backlit; Remote Sensing avail.**; Outdoor Sensor avail.

*Add "-R" to the part number for remote sensing.
**Outdoor and remote sensors must be ordered separately - see Accessories on page 18.

HVAC SUBMITTAL

Metal Duct, Venting, and Accessories

Annapolis Towne Centre

Annapolis, Maryland

8-20-07

ATLAS COMFORT SYSTEMS USA

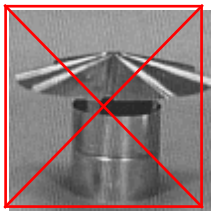
4133 Southerland
Houston, TX. 77092
(713) 460-7300

Exhaust Vents

- Chimney Cap Galvanized
- Roof Jack Aluminum
- Roof Jack Aluminum
- Wall Vent Aluminum
- Wall Vent Aluminum
- Wall Vent Galvanized

Back to Category List

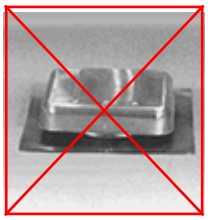
Chimney Cap Galvanized - Product# 96



- ~~3"-24"~~

Top of Page - Back to Category List

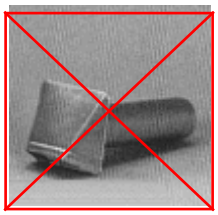
Roof Jack Aluminum - Product# 94



- ~~7"~~
- ~~4"~~

Top of Page - Back to Category List

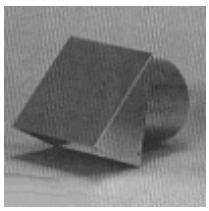
Wall Vent Aluminum - Product# 90



- ~~3"~~
- ~~10"x3¼"~~
- ~~4"~~

Top of Page - Back to Category List

Wall Vent Galvanized - Product# 91



- 6"

Top of Page - Back to Category List

Metal Take Offs

- A Collar
- Adjustable Top Take Off
- Lever Lock Elbow
- Round Base Adjustable Top Take Off
- Side Takeoff
- Top Takeoff

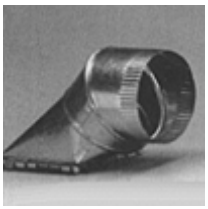
Back to Category List

A Collar - Product# 43

- 3"
- 4"
- 5"
- 6"
- 7"
- 8"
- 9"
- 10"
- 12"
- 14"
- 16"

Top of Page - Back to Category List

Adjustable Top Take Off - Product# 46



- 5"
- 6"
- 7"
- 8"
- 10"

Top of Page - Back to Category List

Lever Lock Elbow - Product# 44

- 4"
- 5"
- 6"
- 7"

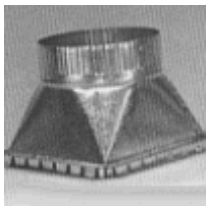
Top of Page - Back to Category List

Round Base Adjustable Top Take Off - Product# 45

- 4"
- 5"
- 6"
- 7"
- 8"

Top of Page - Back to Category List

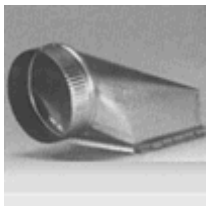
Side Takeoff - Product# 42



- 4"
- 5"
- 6"
- 7"
- 8"
- 9"
- 10"
- 12"
- 14"

Top of Page - Back to Category List

Top Takeoff - Product# 41



- 4"
- 5"
- 6"
- 7"
- 8"
- 9"
- 10"

Top of Page - Back to Category List